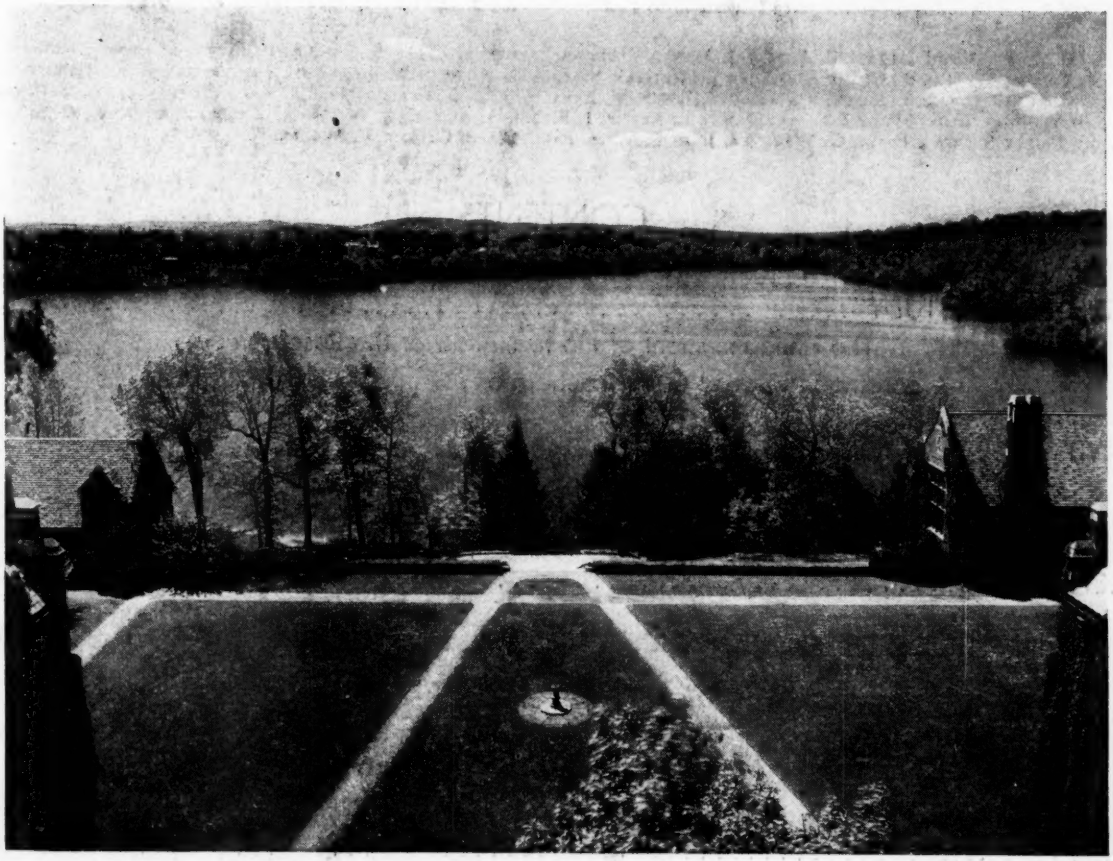
MAIN CURRENTS
IN MODERN THOUGHT

WINTER 1949



Second National Workshop in Integration, June 26th-30th, in Claflin Hall at Wellesley College, Wellesley, Mass.

The above view shows Claflin Hall on the right, on Lake Waban. Announcement of the Workshop will be found on Page 87 of this issue.

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MAIN CURRENTS IN MODERN THOUGHT

A co-operative journal to promote the free association of those working toward the integration of all knowledge through the study of the whole of things, Nature, Man, and Society, assuming the universe to be one, dependable, intelligible, harmonious.

VOL. 6 NO. 4 WINTER 1949 $3 A YEAR

"Ah, but a man's reach should exceed his grasp, or what's a heaven for?" — BROWNING

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MAIN CURRENTS IN MODERN THOUGHT is published quarterly to call attention to significant contributions to learning currently being made by leading workers in the multiple fields into which knowledge has come to be classified. It relates these advances to each other and to the classical and contemporary views of Eastern, European and American thinkers. It is designed to save time for the reader by providing a vantage-ground from which the whole world of knowledge may be surveyed and kept in proportion as it moves toward integration. Its editors assume that the principles of art, the universals of philosophy, the laws of Nature and Man as formulated by science, and the truths of comparative religion, can be orchestrated into a harmonic, meaningful, ethical body of teachings which can be and should be made the central core of curricular study in the educative process at all levels of development. In condensing text, square brackets [ ] indicate editorial interpolation. Three dots . . . in the text indicates a word, phrase or passage omitted in the interest of brevity or clarity. Other usages are standard. $3.00 a year. Foreign $3.50. Contributors to MAIN CURRENTS [illegible] *by F. L. Kunz, Port Chester, New York, to whom all communications regarding MAIN CURRENTS IN MODERN THOUGHT should be addressed. Entered as second class matter April 13th, 1946, at the post office at Port Chester, New York, under the Act of March 3rd, 1879.*

"THE PROPER STUDY . . ."

Editorial Summary

Consequent upon the successful Summer 1948 Workshop at the University of New Hampshire, and encouraged subsequently by sponsors, officers and associates, the FOUNDATION FOR INTEGRATED EDUCATION in November invited a group of eminent scholars, educators, and laymen to meet to discuss the requirements for a planned, sustained, and concerted effort to knit together the whole domain of knowledge and experience, to translate such concepts into educational method and content, and to give currency to such wholes in the institutions of society.

Despite short notice, the following twenty-six made themselves available, out of a list of forty limited necessarily to the New York locality, and met on December 4-5 under the chairmanship of Dr. Kirtley F. Mather, President of the FOUNDATION, and in the hospitable home of Mr. and Mrs. Julius Stulman, Larchmont, New York. Three extended sessions betrayed by their vigor and bluntness the deep feeling present to all that higher education must not at this dark hour of trial fail in its primary duty to bring insight back to mankind.

GEORGE BACKER, Author

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JULIUS STULMAN, President, Stulman-Emrick Lumber Co., Inc. and member of the Provisional Executive, Foundation for Integrated Education

HAROLD TAYLOR, President, Sarah Lawrence College

ORDWAY TEAD, Vice President, Harpers & Bros., and Chairman, Board of Higher Education of New York City

ROBERT ULICH, Professor of Education, Harvard University Graduate School of Education

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It is particularly important during the formative stage of this vast enterprise to have resort to formal papers only when indispensable. Consistent with the general practice of the FOUNDATION in its conferences and workshops, therefore, the discussion was wholly spontaneous. The proceedings, however, have been electrically recorded, and may (after inspection by each participant) be made generally available. The work in hand concerns and should evoke response from every leader in education in this country, and it is obviously impossible to gather them all together. Therefore when the Proceedings of the Summer Workshop, *Issues in Integration*, now being mailed to associates, colleges, and subscribers, have gained some currency, and when other pressing duties have been discharged by our small FOUNDATION staff, some announcement may be made as to the Conference Proceedings. We may here, however, quote the statement of purposes of the Conference as it was phrased in the printed program.

"The FOUNDATION FOR INTEGRATED EDUCATION conceives that the central task of a unifying, general, or integrative education is: (1) to demonstrate, in the most effective way possible, interrelationships between all disciplines, (2) to teach the individual how to dis-

cover such relationships for himself, and (3) to put this integrative "know-how" to work in every life situation.

It is believed that individuals with such integrative education can understand themselves, their world and their universe as "organic wholes." They not only know how to achieve a large degree of self-realization, but know how to do this in a manner completely consonant with the greatest welfare of the whole of world society.

If knowledge is power, then the capacity to integrate knowledge is far greater power. This power should be available to anyone willing to work for it. It is, however, not to be feared, for it does not seek expression through a will to rule, exploit, injure or destroy for self-aggrandizement.

If an integrative education can be provided today, it is the obligation of educators to make it available. Not to supply it is to contribute to the growing disintegration of modern times, caused in large part by the wrong type and application of education. There are and always have been some individuals with power, effectiveness, and "sense of the whole," but too often these abilities have been developed in spite of rather than because of formal education, and come years after leaving school. This represents a serious wasting of civilization's most priceless raw material — enlightened man. There seems to be no reason why a steadily increasing number of individuals cannot be helped to achieve this ability during their school years. How can education fail to meet this challenge?

It is with the foregoing convictions in mind that the FOUNDATION has asked you to attend this conference on December 4-5, 1948, to secure the benefit of your judgment on how a unifying general education adequate for our times can be achieved. The objectives of the program outlined on the following page are:

1. To identify the method or methods applicable to all knowledge by which we may progressively develop a unifying general or integrative education.
2. To clarify the meaning of such terms as "unifying," "general," and "adequate for our times."
3. To agree, in principle, upon the wisest and most practical procedures to be used in developing a unifying general education.
4. To examine critically the work of the Foundation as developed to date and as planned for the immediate future.

As stated in the letter of invitation, this meeting has been called in the expectation that from it will emerge a clearly defined plan of action of paramount educational importance to the United States and the world. This is not just a concern for making a particular organization successful and effective. It is in much larger measure a concern for restoring to the center of society the role of education and the scholar in order that knowledge and truth may be supreme in the affairs of all men everywhere."

Professor Northrop accepted the responsibility of opening the discussion. He concentrated our attention upon the known rôle historically of a community's concepts of nature and man in governing its juridical and other institutions. Throughout the session this served as background, as developed by Dr. Kluckohn, Father Phelan, Professor Sorokin and others, and the questions became practical ones as to methods which must embrace the affective, reverent, aesthetic, and value-essentials of humanity in one whole with the logical, scientific, and material aspects of life. It was agreed that systematic work held every promise of bringing about a genuine unity of agreement upon essentials for such conceptual linking of learning and life, and the tenor of the conference never departed from this central necessity into secondary considerations of the political, economic, or social requirements which concepts should shape.

As a consequence a formal resolution was unanimously accepted by the Conference at its close, to set up a co-ordinating research board to guide the FOUNDATION in a program of truly essential studies. Many such inquiries may already be going on, isolated from one another in various parts of the world, and need only be reported upon. Others may be identified and implemented by the FOUNDATION. The men present agreed to act upon or with such a planning board of studies, which is conceived as a body responsible for the present only for identifying an over-all program and the more important and urgent projects in that program; and for maintaining proportion and essentiality as the program evolves. The task of making and maintaining progress along lines laid down from time to time by the Board in policies is the duty of the FOUNDATION FOR INTEGRATED EDUCATION.

Progress will be regularly reported in MAIN CURRENTS. It is hoped that a summary report of the meeting of December 4-5 and of an organizing meeting scheduled for January 15th, 1949, will be ready for our next issue.

F. L. Kunz

INVITATION TO A MIRACLE*

By an Editor

For any who doubt man's capacity to work miracles, now is the time to stop reading this editorial. It proposes the working of a miracle, and it proceeds on the assumption that it can be accomplished with the materials at hand.

The miracle is the production of a kind of human being who can live in peace with his fellow men. As the United Nations undertakes to provide the machinery for the maintenance of world peace, our plan undertakes to provide the human climate in which that machinery can function.

The end-product of our plan can be visualized in sharp detail. We seek the means of creating a human being — and ultimately, a world of human beings — possessing the maturity, the discipline, the vision, the balance, the responsibility, to be able to build and maintain peace.

The need for such a body of men is surely amply clear. Man has gathered the weapons with which he can neatly wipe himself off the face of the earth. Perhaps he can't do it in one year, or in one atomic war, but he can do it in time, and seems bent on that very thing. The trend is clear.

To try to reverse this trend by halting technological progress in its tracks — as proposed by a couple of scientists recently — is like trying to reverse the direction of Niagara Falls. Man is dynamic; the proddings of progress are in his bones. For better or worse he's plodded upward through the eras of ice, stone, wood and steel, and now he's battered down the barriers and plunged into the atomic age. Because he is such a remarkable fellow, he has been able to harness and turn to his purpose almost everything he has met.

But somehow in this headlong campaign of conquest he neglected to harness the one creature who posed the greatest threat to his security — himself.

It is our proposal to launch, in the most careful manner possible, the campaign to achieve that final conquest.

Some New Suggestions on the Tactical Approach

The idea is far from new. It was old when Christ walked the earth, and was fundamental among His teachings. Every religious organization undertakes to further it. Within the United Nations, UNESCO has been organized to undertake to bring men into closer understanding. There are many other such efforts under way.

But of all the current forays aimed at the conquest of man and the correction of his blundering ways, two which have come lately to our attention come nearest to the tactical approach we are about to suggest.

A few weeks ago we published an editorial briefing the initial case study of the National Planning Association into the causes of industrial peace. The key to the novel approach of this effort, and in our judgment the basis of its value, lay in the fact that where almost every other inquiry into labor conditions set out to find what caused strikes, this study sought out the instances of enduring working labor-management relationships and undertook to discover what caused the absence of strikes. The findings will prove, we predict, of solid value to industry and to the Nation.

The second effort which impressed us was discussed by Waldemar Kaempffert, science editor of the New York *Times*, in an article in the current issue of the magazine, *Tomorrow*. The article concerned science's investigations of cycles — the assortment of rhythms which appear throughout nature. The point was that nothing in nature, whether the rise of the tide or the fall of the hems of women's skirts, happens by caprice alone, but as result of the workings of measurable rhythms. Among the other things that go up and down according to definite patterns, the scientists held, are the tempers of human beings. It may one day be possible to predict, these scientists declare, whether on the following Thursday morning you will wake up sore at the world, or full of sunshine and human kindness.

Damn foolishness? We have seen, lately, too many man-wrought miracles to prejudge the work of any group of earnest, intelligent, purposeful men. To your pet dog, the manipulation of a knife and fork is a miracle far beyond his hopes of attainment. To you and me, the construction of an automobile engine is God-like in its combination of complexities. And to a skilled engine maker, the wartime Manhattan project was beyond imagining.

Manhattan Project Suggests the Attack Technique

It was, we suppose, this Manhattan project that started us thinking seriously about the possibility of a co-ordinated effort to produce a reasonable man.

The A-bomb started as an idea in the head of a few men — a fantastic, "impossible" notion.

The war produced the driving impetus for the mobilization of all available men and materials for application to the common goal. The scientists, the engineers, the industrialists were brought in, the materials supplied, the water power harnessed and brought to bear, the factories built, and the whole organization set in motion. Two billion dollars went into the project. Out of it came the "impossible" — the atomic bomb.

We propose such an organization, with equivalent capitalization and equivalent enlistment of human talent, for the express purpose of discovering how to produce a reasonable man. We propose that the United States Government set out, under a One-Triple-A pri-

* Under the title, "Battle Plan for the Supreme Job: Man's Conquest of Man," the accompanying article appeared as an editorial in the San Francisco *Chronicle*, Paul C. Smith, Editor, on November 8th, 1948. We reproduce it in its entirety, with kind permission of the publisher, George T. Cameron, as an example of independent thought which leads precisely in the direction taken by MAIN CURRENTS from the time of its founding. ED.

ority, to explore the genus man to discover those things that can be done by us as a nation to make him a responsible citizen of the world.

We are confident it can be done. We believe further that any who takes the position that it can't be done is arguing beside the point. The point is that nothing can reasonably be dismissed as impossible until it has been tried. This has never been tried.

Throughout his tenure on this globe, man has developed and applied astounding amounts of energy in the fields of mutual destruction. During the last war most of civilization was systematically harnessed to such a project.

Nothing Undertaken — So Nothing Was Achieved

Nothing comparable has ever been achieved constructively. Nothing comparable has ever been undertaken constructively. You say it can't be done? We say the time is approaching when it must. We say the time is at hand when this nation, to save itself and its way of life, must organize the same mighty energies in the project of waging the peace that it devoted to waging the war.

What we're proposing here is a beginning at such an organized effort, in a specific field. We believe it may well prove to be the central field in which the campaign is to be waged. We are suggesting, for this phase, the expenditure of as much energy for the improvement of man and the furtherance of society's progress as was expended, in the Manhattan project, for the destruction of man in the effort to hold society back from the edge of the precipice.

What could be done, constructively, with this $2,000,000,000?

This nation could erect and endow a tremendous university for the co-ordination of all that is now known and pertinent regarding human reactions, for the sifting and testing of what is suspected, and for the exploration of what remains unknown. Here would be assembled and co-ordinated and analyzed and synthesized all the data mankind has thus far laboriously amassed on the subject of himself. Here would be weighed the teachings of all history, the findings of the physicians, the psychologists and psychiatrists, the sociologists, the clergymen, the geographers, the meteorologists, the nutritionists, and all the others whose work bears on the common subject. Here would be the gathering place for the most eminent men in every field, to pool their intellectual resources, to advance their research, to want for nothing humanly possible to aid in the furtherance of their project.

Here would be explored, as never before, the sources of those ugly and elusive forces that drive men and societies to irrational actions. Here would be sought, with equal fervor, the roots of rational behavior where it has appeared most strikingly in the workings of men and nations.

No Revolution, but Slow, Steady Improvement

Spectacular results would not be the objective of this program. Instead we would hope for a gradual but steady increase in our capacity to improve, and for gradual but steady improvement as the fruits of the research filtered down into the schoolrooms and the homes. It would lead, we would hope, to changes in curricula, to new standards for the steering of students into separate fields of endeavor and study, to a wealth of new literature, to new programs and new techniques for the dissemination of information. It would produce, over the very long run, a new kind of parent, a new kind of teacher, and a new kind of citizen — a citizen with a firm intellectual grasp of his responsibilities, and the motivation to discharge them.

We do not minimize the difficulties of persuading a hard-pressed Congress to appropriate the money to launch such a project, of discovering adequate leadership, of overcoming skepticism and cynicism, of lifting the project high above politics and every other partisan consideration.

But these are obstacles no greater than those that have been faced and overcome time and again in the prosecution of wars. Our progress deeper into the blind alley of international fury must be apparent to the forthcoming 81st Congress as it is to everyone. It must be apparent to all that the progressive increase in the arms budget is not the whole, the final, answer. The final answer must be the creature we are seeking here — a rational, reasonable man.

We say that $2,000,000,000 is a cheap price for such a creature. It is a cheap price for the discovery of a method of increasing the sense of responsibility of the American community by 1 per cent. It would be more valuable in our arsenal than the atomic bomb.

It must be obvious, of course, that the discovery of how to produce a reasonable man, or even the application of the knowledge among 145,000,000 Americans, do not mark the end of the woes of this global community of which we are a small part. There would remain the development of techniques of disseminating the secret through the remaining 2,000,000,000 human beings — communication of the knowledge and its application within the several and often perverse environments abroad. That is a project of centuries. Yet — is it impossible?

So was the building of civilization out of primitive man — but it was done, and it can be pushed on to greater heights.

This civilization cannot be so pushed, nor even survive, unless the problem of man is solved. We say it can, it must, be done.

THE CONCERNS OF STUDENTS

The following report and accompanying woodcut are reprinted from *Motive* (November 1948), the admirable journal of the Methodist student movement. A questionnaire was sent to students, who supplied the responses for things *As They Are*, and to "adults who work with students," who responded with *As They Should Be*. The editors imagine themselves publishing later the same series *As They Were*, and *As They Are*, at that future date.

Whether this is a fair sampling is a question remaining unanswered, but one fact and one conclusion seem undeniable: *There is no heading for philosophy*. There is little hope for things to be *As They Should Be* on campuses until the required rational connections have been made throughout learning. F.L.K.

CONCERNS

AS THEY ARE

SPORTS

Necessary to keep "school spirit;" students avid spectators, more concerned with interschool competition than sports for sports sake, but not so "rah-rah" as before the war; highly commercialized; emphasis on winning puts other values in shade; still a matter of tail wagging the dog; athletes often too narrow in specialization, not all-round students; like excitement and social affairs that go with it; cause of seasonal hysteria.

SOCIAL LIFE

Prime concern; operates on a superficial level which is escapist; not uncommon to get "looped" once a week; comes before everything else; students have "go-itis;" studies incidental to college life; college exists for social contacts; too much concentration on dancing; no general recreational life connected with social life; costs!; couldn't find a mate without it; most of boy-girl relations tie in here.

LIVING RELATIONS

Crowded, casual, congenial; students all alike — good guys; good sports; friendships not developed creatively; room is poor place for study; want comfort in living place and to make friends elsewhere according to interests; group feelings give many a sense of security; extremely personal level, with little privacy; no chance to be alone; training ground for superficial living; creates "good sport" type.

AS THEY SHOULD BE

Concerned with welfare of every student on campus, an exercise and entertainment, never as an end in itself except temporarily by students especially gifted; openly support moves to eliminate commercialism and discrimination in intercollegiate games; favor increase in allotment of money, staff, facilities, for intramural; support efforts to provide facilities for co-ed sports; seek to create new games wherein cooperation is the motive.

Democratic, inclusive, varied, creative, conducted so that the interaction of persons will develop the personality potentials in each one participating, so that group feeling and loyalty are achieved within a group without producing cliques; emphasis on simplicity and economy without sacrificing beauty and form.

A center for deepening fellowship which goes beyond "back slapping" and "tie borrowing" stage; allow maximum of self-government; develop cooperative dorms and eating places not only for economy, but to keep in touch with the manual labor that is necessary for them to live; equal treatment and regard for all regardless of group membership; nonsectarian and unprovincial outlook; development of Christian qualities and disciplines; growing community spirit.

SEX Everybody interested, all involved in some way in problem of sex and have to make choices sooner or later; number-one bull session topic; not much evident awareness of any compelling Christian demands; have self-centered relationships; eager for information; the New Testament of sex is the Kinsey Male Report and the anticipated female report; think it's a good idea, here to stay; many forms of sexual self-indulgence; serves as end in itself rather than part of larger experience; want information but would like most information to confirm individual's patterns and desires.	Reverence and gratitude for the sex impulse as a means for living creatively in every sense of the word; a means to personality growth; pleasant anticipation of fulfillment of the divine intent; ought to be associated more with morality; atmosphere wherein group pressures do not demand surrender of values. Sex life should never be exploited; should not involve others in experiments before marriage; should be more understanding of the sexually unorthodox; not restraint and negativism, nor Puritanism, but development of normal urges, with expression aimed at future marriage relationships of husband and wife; enjoy wholesome associations with both sexes.
MARRIAGE "It's a wonderful thing, let's try it sometime." Want more discussion groups and courses before marriage; average student has faith in success of own marriage, ignores pitfalls in his case; thinks there is too much divorce; "vet" situation on campus has changed attitude for the better; girls prepare for jobs with eye on the altar; married students make better grades, study more.	Commitment of self to a mate and God, which requires a spirit of self-denial, selfless giving, and consequently results in the complete fulfillment of self; through companionship build an atmosphere into which new personalities may be born and prepared for Christian living, through precept and example promote classes and social environs which will contribute to effecting above relationships; a desirable state for some but not for others; recognize that divorce is not a natural and easy way out; attitude should be, "What can I give?"
PARENTS AND HIS HOME Loyal, yet neglectful; casual regard for advice, but money welcome; ignore sacrifices and love; feel little genuine understanding or close fellowship; viewed with increasing respect; taken for granted; desire more independence except financial; nice to see them for a short while; analyze critically; you got to break away sometime, might as well be now; often cause of honest endeavor to be successful and worth while; week-end exodus to see parents, save money and see old "gals" or fellows.	Recognize obligations; honor desires of parents in so far as they conform to Christian principles and purpose; maintain personal ties; respect opinions of parents; never be ashamed of home or parents because of lack of social position, culture, or wealth; share new experiences; appreciate them without being bound by them; should study to make home a laboratory in Christianity and democracy; attain independence but retain love and respect; don't try to "bring up" parents.
FACULTY Are they human beings or impersonal gods? Too wide a bridge between faculty and students; too many are underpaid; often interested but unable to give attention; some respected for their accomplishments and methods of approach; sometimes doubt their abilities; good relations if professor's technique is good; too many inexperienced and unprepared; faculty corresponds to management and students to labor in relationships; most concerned with students only during short classroom period; often considered friendly enemies.	Should seek to stimulate interest, not just pass along facts; encourage a personal relationship between teacher and student in order to exchange philosophies for living, share in learning process; students should be less skeptical, should not blindly accept everything the professor says, should feel free to question; should feel gratitude and respect for good intentions; demand real stuff from them, putting pressure on for quality instead of laxness.
VOCATION "Gotta make a living and this is what I'm most interested in." Many still looking around for something that they "like best" or are "really interested in;" want to make better-than-average salary in a job with prestige; important because it determines social and financial standing in the community; great interest; some sense of Christian mission, but very limited in numbers; little sense of responsibility to mankind.	Choose, don't fall into, one; should be an inner conviction that "This career is what I must and ought to follow; no matter where I labor, I shall do so in partnership with God for the profit of men." Vocational counselors needed; vocation will enable one to live out effectively his Christian convictions according to his knowledge and skill; a work which one does in relation to a total living process. All work must have religious significance.

STUDIES Secondary to social life and extracurricular activities; can't be allowed to interfere with "country club" life; grades don't necessarily reflect what you know anyway; average intellectual curiosity and motivation are missing; undisciplined; a few are interested; most study as little as possible but buckle down when necessary; others can't minimize studies because of registrar; O.K. as long as one passes; "smart" students get out of everything they can; degrees really important; not a good idea to do more than you have to.	Avenues of personal development and widening the basis of appreciation and understanding; refuse to cheat, do work thoroughly, give oneself opportunity to effect mental discipline and intellectual insights; deserve more time and attention than any other activity; give vocational preparation and enlightenment on personal-social issues of the day; freedom to explore fields of individual interest without sacrificing scholarship; creative attitude.
FINANCES (NOW) Not an acute problem for most; many have to skimp and work a bit on the side, but have spending money; general carelessness in spending; concern in getting more. "Wish I had a car. . . ." Extravagance; unhealthy attitude about spending government money; sorority cramped because university allowed one hundred and twenty-five dollars expenditure for "rush week;" GI Bill a godsend.	Allot money with view to maintain personal standards and to support realistic needs in community and the world; seek to eliminate from personal and campus activities unnecessary expenditures; spend money for education in terms of what he will return to others; express Christian purposes both through earnings and expenditures; should begin to practice principle of tithing and stewardship; responsible to self, church, and community.
ECONOMIC STATUS (LATER) Preparing for higher paying jobs; money important; want to make a "killing;" expect high return for education; want to contribute to society and maintain high standard of living; want economic security; great expectations; "after all, what am I going to college for?"	Income not an end, but a result of service to society; to have what is needful for reasonable life for family is all a steward of God is entitled to — anything over this must be given to those less fortunate; concern should not be monetary, but in terms of contributions to economic status of everyone; recognizes the ease with which he rationalizes his compromise with the primary objective of service; if economic success comes he must work out Christian solution.
PERSONALITY "I have two. . . ." Most important in any field; made, not born, and college is place to develop it; eager to improve; little individuality; some got it, some don't have it; make yourself likeable; everybody wants to be liked.	Seek to effect within one's own life those qualities that make a Christian person; develop habits and skills which interest and serve others; treat persons as potential sons of God; free from self-consciousness, thoroughly absorbed in things external from self; should not be confused with a deeper thing, character, but should be an outward expression of it.
CLUBS AND ORGANIZATIONS (CAMPUS) Too many; boring but sometimes unavoidable; often the chief interest; give opportunity for student leadership; often do more than classroom; nearly everybody belongs to one or more; active interest; too many honor organizations — lose meaning; "organization conscious;" but the best place to develop one's personality and abilities; lead to BMOC status and membership in ODK.	A laboratory in human relations; serve needs of personality and others; student should limit membership and activities so that he achieves balance between academic work and activities, learn to work with persons whose goals are different, join forces with local town groups to break down ivory tower complex; complement and supplement rather than duplicate; coeducational, interracial, intercultural, and inter-faith.
STUDENT RELIGIOUS GROUPS Don't interest majority; nice if you have time; worth while, but need broader scope; interest at home determines interest in college, but few remain active until senior year; some groups asleep; acquiring more of a place of respect in thinking of students; doing wonderful thing in small way; ever-present danger of letting the halo show; good for "religious" person; often don't "rank" on campus; need to support by money, but not time and interests; a saving remnant on the campus.	Piety sans Pharisaism, socially expressed; help keep religious motivation, give opportunities for leadership, strengthen fellowship; student should consider exclusive contact with religious group versus wider leadership, weigh carefully training he is receiving in terms of continuity after college; remold public opinion of the campus; integrate religion in student life; not self-contained but concerned with religious life of entire student body; go beyond group itself to social, economic and religious needs in the community.

RELIGION	
Religiously immature; rules for decent living and a faith in the supreme being O.K. but don't go overboard; we gotta be practical; concern mainly in time of trouble; too often categoried as pain-killer or patent medicine for mind of man but thinking is revised when fundamental questions of spirit and mind remain unanswered; necessary, but not necessarily organized; neglected by some, a source of strength and an avenue of work and life to others; almost always thought of in terms of institution; each person's own business.	Should be recognized as different from Christianity; integrating force; "a divinely implanted growth tendency;" seek to discover what is most important and most real in the light of Christian heritage and modern knowledge, seek a realistic basis for the relationship of his version of Protestantism to Catholicism, Judaism, and other world religions; student should win for himself an academically valid and experientially workable religious faith; deeper than creeds; a continual and untiring positive effort to relate reality of faith to everyday life situations with fellow men; willingness to learn, live religion in everyday life, relate religious motivation to knowledge of campus; give direction and meaning to life; active seeking for meaning of life found in terms of man's relationship to his total world; convictions reasoned from experience.
CHURCH	
A necessary institution; a good influence, would like to see someone else maintain it; criticize the church, but unwilling to work for a change; usually thought of in terms of personality in pulpit; many attend irregularly; few habitually; necessary, useful institution of society — hypocritical, dogmatic; attendance a habit formed at home; relationship casual and of secondary importance; falling down on job; neglecting an important responsibility and ministry to students; inexpensive place to date; too much accent on church, not enough on religion.	An instrument upon earth for the kingdom of God; sustaining fellowship of those who seek for truth, an outgrowth of man's need, not a superimposed cultural institution; a place of worship, vision, work; students should assume heavier responsibilities for reforming and revitalizing the church from a social-community club into a spiritual "cell." Along with realization that we need a new understanding of the theology of church, students ought to become acquainted with the church as a leading organ of society; that it provides, under proper conditions, both intellectual stimulation and spiritual satisfaction; seek through a personal attitude and spirit to make the church appealing to students who are not Christian; understand the church in its educational and missionary aspect, as a united organization.
POLITICS (CAMPUS)	
Students sheep-like or indifferent; big wheels dominate; elections are popularity contests — all ego, no issue; groups "trade" votes; very active for few; not too clean; some improvement indicated; need for understanding rules of self-government; something all students gripe about but do little to change; why bother?	Informed, informing; critic and creator of policies; an opportunity to learn meaning of citizenship and to exercise Christian conscience where it can be effective in building the kingdom; permit all political groups to exist and to function; emphasis should be on service, not power; refuse to "block vote" or join secret combines; willing to run for office if qualified; point out issues, recognize necessity for compromise and politicing; strive to make campus politics sufficiently worth while to merit time and energy of Christian student.
POLITICS (US)	
Dead to real issues; complacent and shallow; politics something to complain about, like bad weather; too much trust in propaganda-filled newspapers; men more interested than women; realize its importance but not interested past the conversational stage; more interest shown since advent of veteran on campus; little real information, likes to flaunt what he has; liberalism often a veneer; sloppy thinking shared in lack of discrimination between communism and socialism and Wallace and the big bad communist crowd.	Active interest; learn political ways, weaknesses, and needs of government; express opinions to legislators and urge others to do the same; aware of major issues and of voting records of men from his district; work out Christian approach to politics.
UN	
Must be strengthened to be effective; a good idea, give it a chance; can't discuss it intelligently; favor it but don't know its functions; has great potential, but is slow in realizing it; agree in principle; give little active support; general attitude is that it's not working because of Soviet vets.	Secure knowledge of organization and activity of UN, recognize its crucial role and the opportunity which it provides for the middle-road ideologies to work against division of the world into two armed camps; understand its weaknesses; not an end in itself but a step toward world unity; get USA to merge its sovereignty and power with that of other nations,

UN (concluded)

not just use UN as a cat's paw in fighting Russia; give moral support, work with it, improve it; work through political action for repeal of veto, and protest past and any future unilateral action by the USA; necessary step toward world government.

WORLD GOVERNMENT

Sympathetic with idea, but take little responsibility for seeing that progress is being made; intellectual assent but passive support; think UN is best tool for now; concerned are for it; lethargic don't care; some skeptical; growing movements; many think it is a glorified USA, with world conforming to our way of doing things; faculty often equally unconcerned, fails to arouse students; campus place where most interest is found.

Sponsor forums and discussions; promote; indicate through attitudes and conversations that he is a "citizen of the world," free from provincial and national loyalties and prejudices; lobby for USA relinquishing some national sovereignty; study implications of world government locally; aware that world government will come by force or by peaceful means, know that there is no clear imperative regarding immediate steps to be taken; accept fact that approachment necessary on cooperative basis is not present now, work for humility regarding own ideology and for the extension of political, economic, and cultural relationships.

PEACE

Desirable; feel that there is "little we can do about it personally;" something far-off which others will be blessed with; war not necessary but anti-Russian propaganda having its effect; not likely — nationalism will not build for peace; war is not the answer; want it but don't want to change any of our basic policies; when's the show-down coming?

Most important; active participation in one or more of the peace movements essential; unlikely if Christian student remains uninformed, indifferent, and inarticulate; encourage thinking to "save men" rather than "save face;" not the absence of war but the presence of constructive Christian love; demand active intelligent participation, only alternative to destruction; personal responsibility for its achievement on world scale; think peace, work for peace, pray for peace; cultivate good relationships and friendship of those of other races and countries on your campus and in your community.

DEMOCRACY

All committed to it, expect fruits of it; hazy thinking and definitions; best form of government in the world; sing praises to it, but fail to preach living democracy for the socially oppressed and economically purged; big concern, because it's what the boys fought for; not perfected, but best idea; "It's the American way of life"— the two are the same; let's keep it as it is.

Study its history; obligation to know what is necessary to be good citizen and member of democracy; recognize that no political method (means) is absolute, that Christianity stands in judgment of democratic ends and means; work for democratic procedures in organizations and for increase of democracy in operation of student affairs, work for literal application of democratic principles, the implementation of Christianity in politics; know difference between "democracy" and US government; consider methods of "creating" or "improving" in this and other countries.

COMMUNISM

It's a threat to our way of life; synonymous with Russia; bad, bad, bad — what is it?

What are its values, weaknesses? What positive things can we learn from it? At what points must Russian Communism be resisted, and how? Distinguish between new economic tools in Socialism and loss of political liberty; check its spread; permit freedom to organize and speak as any other political belief, legally and aboveboard; should be seen as a possible religion, especially since it has stolen one of Christianity's strongest tenets — that of brotherhood — and seeks to hold to it as a religious doctrine which puts finality in man without God; a much-misunderstood and misused philosophy with a variety of expressions; feel challenge to make Christianity provide a dynamic alternative.

SOCIALISM

"Same as communism, isn't it?" Don't like it.

Largely untried social scheme with great possibilities but must be guarded lest it pass from control of citizens into hands of minorities; need for more planning in US, the same kind of planning US is advocating for world order; future of Europe rests with success of democratic socialist forces which US must support or force mass of Europeans into communist camp; close to a Christian political and economic system; need to understand it, study results of its practice before giving complete commitment, see in its program a needed emphasis, whether means agreeable or not.

CAPITALISM

Will fight for it; American, therefore "for it;" feel debt to capitalism and advantages of free enterprise, but aware that something must be done to alleviate present strife between labor and capital; not all right, but better than communism; synonymous with democracy; better than government controlled economy; offers best chances for economic advancements.

Distinguish between democracy and capitalism, recognize capitalism as historic development having strengths, weaknesses, and historic relativity, recognizing the limitations of the principle of automatic harmony of individual and community interest; seek an alternative basis in Christian love and justice, admit that you may support any doctrine because of its bearing upon own status and the income of self and family; understand that abuses may be corrected through Christian students who become leaders; should face issue of whether Christianity is guilty of sustaining the system.

RACE RELATIONS

Too much talk, not enough thought; growing concern; change necessary, progress being made; think they should be improved but won't stick neck out; many claim tolerance though quite prejudiced; conscious of a problem; situation often good on surface because no evidence of problem; students in general much more "liberal" on this subject than other groups in society.

Accept the person, not the color, understanding and appreciating complete equality of every race; more courageous action needed; don't preach if you won't practice — that's hypocrisy; should be no racial differences on college campus; reasonable and intelligent attitude holding high and uncompromising standards in interracial relationships; get to know individuals as personalities; understand situation in your community and have an effective plan; unrestricted activity for brotherhood; aggressive action for the end of segregation.

NEW BOOKS

In *Mirror for Man* (McGraw-Hill, New York, 1949, $3.75), Clyde Kluckhohn, Professor of Anthropology, Harvard University, has achieved in highly readable form an admirable balance in popular exposition of cultural and physical anthropology. This volume won the publisher's ten thousand dollar science contest prize, and should serve to acquaint the laity with those hundreds of novel and significant items which now concern the men of science of the science of men. Its success should be the greater because the bony structure of systematization and classification, as necessary in anthropology as elsewhere, is inconspicuous in the text (but discussed in the appendix), and instead tempting detail and entertaining challenges to thought are discussed with delightful detachment.

The reader who has had a surfeit of "cracked and empty skull" anthropology will have his interest greatly renewed on reading the author's compact and polished paragraphs about Sheldon's somotypes, yogis, contemporary psychology of language, and the other present fare in this branch of science. He will have reason to think afresh about the world scene. He will be brought as near to breaking out of the confines of physicalism as is possible upon data at present accepted by the generality of senior anthropologists.

If we have any reservations about this delightful volume it is only on that point: the failure to distinguish between the supernatural (which scientists must reject) and the superphysical (which they have not yet properly examined). Professor Kluckhohn's whole orientation as here revealed, is suited and even friendly to the latter as is readily deduced from his treatment of religion, of "the American dream" and the like. This has bearing on relations to Russia for Russian thinking is physically confined. As our author is in charge of special studies of Russia at Harvard, his resources to deal with that great people become important to us all. The book is encouraging on this head, if not decisive. In the science so readably expounded we have here writing which is likely to fit future developments that are bound to substantiate the American ideal as they come along.

The Recovery of Culture (Harpers, New York, 1949, $3) rests upon an arresting thesis about man's origins. The author, Henry B. Stevens, is Director of the General Extension Service of the University of New Hampshire. Through this and his private activity, he is an experienced scientific agriculturalist, as well as a man of comprehensive learning. For present purposes it is more to the point to say he is also imaginative.

Dr. Stevens examines, with deft lightness of touch, but upon well-marshalled data, the life of primeval man as a relation of the vegetarian primates, presuming man to have lived first and most naturally as an ex-tree-dweller upon fruits and nuts and plants (as his presumed animal cousins still do) and only abberrantly upon meat and fish. He sets the cradle of this race down in Java (Awa), and calls this the Awal-culture. A fine net of lingual affiliates, thin in parts, but remarkably tough on the whole, is spread out over the rest of Asia and Europe, and catches up on its thread such terms as apple, Apollo, Avalokitishvara, valhalla and so to Avalon. This net of language and myth is laid over solid data about racial history, and the argument is pressed home: savagery, hunting, fishing, and war are the violation of our primordial course, and culture, agriculture, orchardry and peace are the elemental truths and needs of human society.

We venture to say that if Dr. Stevens' remarkable volume were to be read along with that of Professor Kluckhohn (reviewed herewith) the combined effect would be to give a new and proper preeminence to

anthropology as it is now going to be, the science of man as a creature ensouled, not merely an animal with mental adjuncts. We are a long way from having ultimates in this science, but we are certainly not without new direction in it even if neo-Darwinianism still haunts our thoughts long past a proper time.

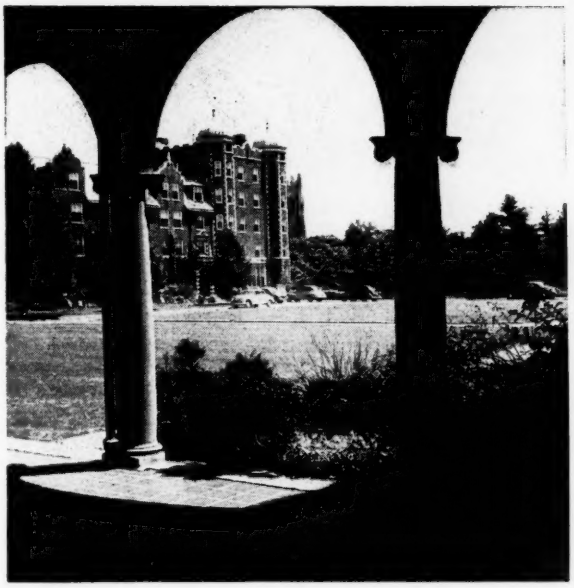
A new volume, *World Philosophy: a search for synthesis*, by Oliver L. Reiser, Professor of Philosophy at the University of Pittsburgh (University of Pittsburgh Press, 1949, $2.50) illustrates the importance of a true universality in the philosopher. By refusing to be limited to the content of present-day science, but by displaying a rigorous adherence to its resources in method, Dr. Reiser charges the reader with a hope and a vision to which he is entitled by human achievement, and to which he is driven by human necessity. This vigor, vision and scruple is doubtless the reason why this writer has such a following.

To Reiser, "expanding consciousness, the emergent synthesis of inner and outer circumstances, is the impelling force of social change. This means that politics and economics, education and religion are all man-made codes and are as subject to the processes of evolution as man himself." (p. 83.) But the changes are associated with "an archetypal field of influence" which provides for the order and likenesses in human organisms, organizations and activities." (p. 57.) Finally, out of self-consciousness comes the possibility of creative self-evolution under this order. (p. 125.)

We must add that this stirring book applies relentlessly, and on every page, to the world crisis. Dr. Reiser is not interested in speculative philosophy in itself. He is fully alive to its global significance, and the hope it alone holds for a lasting solution of the implacable problems of entering a new era of peace.

The first edition of *The Soul of the Universe* (1940) by Dr. Gustaf Strömberg, was reviewed in the friendliest terms in many journals, including MAIN CURRENTS. The author's remarkable grasp of physics, and the closeness of his reasoning in organizing all forms of science in a framework of realistic idealism, proved exhilarating. At that time a criticism expressed or implied by many readers was summed up in a review in *Nature*, October 26, 1940. (p. 543) "Unfortunately the working out requires subsidiary *ad hoc* hypotheses of the kind that enable any theory to be fitted to any facts. It must be said in favour of the author that his account is plain and straight forward and free of the mystifications and paradoxes used by certain contemporary popularizers. The book may appeal to the general public on its merits. It is scarcely likely to interest the man of science, and the philosopher who is concerned with the notion of the world-soul will probably prefer Plato's *Timaeus* even though the physical theory is out of date."

In the present second edition (Mackay, Philadelphia, 1948, $3.50) Dr. Strömberg has not only enlarged and filled-in the argument, but has included in the appendix a series of papers on The Physical and Non-Physical Worlds, Mind and Matter, The Autonomous Field, Emergent Energy and Theories of Light. These render



Another view of Claflin Hall, Wellesley College, location of the 1949 Workshop. Please see page 87.

obsolete most of the criticisms such as that cited above, except possibly one's preference for Plato, despite his out-of-date physical theories.

As to that, Dr. Strömberg (one would think) should be content to be coupled with Plato, even on terms of being only an auxiliary modernizing text. But the worth of this remarkable book is much greater. *The Soul of the Universe* makes it possible for a truly philosophical man of science to find immense stimulation which he may not be able to derive himself from his own data. For here physics, biology, and psychology are on all fours together, not by a cheap and dislocating reduction to sheer energetics, nor by a loose use of the term soul. Field theory is the key.

All this makes the book quite unique. It is a satisfaction to see it returned to circulation.

The solid link between Plato and Strömberg is forecast by the publication (Methuen, London, 1948, 50 s.) of H. S. M. Coxeter's long awaited *Regular Polytopes*. For the purposes of most of our readers it is enough to say that the vast literature of Schoute, Stott, Schläfli, Sommerville and others is focussed in a definitive study. This authoritative and (what will be) standard text is of prodigious philosophical potential.

Pursuant upon the appearance of this work, the exact connections between modern scientific theory and Plato's Forms can (and should) at last be made in realistic terms. This matter has been so frequently referred to in MAIN CURRENTS that we need only say here that no intellectual instruments are now lacking to create a scientific philosophy entirely consonant with religion, a modern theory agreeable to classical insight. All that our times need for a cultural break-through is united action in the use of the tools. F. L. K.

FIELDS IN PHYSICS, BIOLOGY AND PARAPSYCHOLOGY* R. P. Whorf

Broadly speaking, in physics the term "field" is referred to the continuous distribution of some condition or function throughout a continuum. The precise nature and magnitude of this condition varies greatly and is to be determined by an analysis of a particular problem. Thus, the condition may be completely describable in terms of a single number or magnitude; e.g., as in the distribution of temperature in a solid volume at any particular moment or in the steady-state condition. This type of field is called a "scalar field." Next, the condition may require two quantities for its definition; e.g., a force field or a velocity field as illustrated by a fluid in motion. In this case, we have what is called a "vector field." The condition at each point is defined by a vector which has a magnitude and direction. Under certain conditions there may be a functional relationship between the vectors, which is expressible in mathematical terms. Finally, we may have what is called a "tensor field." Examples of a tensor field are given by the stress in an elastic body or by the gravitational field in the 4-dimensional space-time of general relativity. A tensor might be described as an operator that when applied to a vector changes both the direction and magnitude of the vector, or as a generalized vector requiring more than three components for its determination. A vector might be thought of as an operator that can give to material particles a certain direction and magnitude (e.g. speed). Thus, a tensor is in a sense a second degree operator; an operator on an operator. The development of tensor theory is associated with the names of Ricci and Levi-Civita and is of fundamental importance in Riemannian geometry and the general theory of relativity.

A field is called "static" if the conditions at each point do not vary with time, and it is called "time variable" or "dynamic" if the conditions do vary with time. The rate of change in space and time of the quantities which describe a field is often given by certain partial differential equations. It may also be possible to consider "discrete fields;" i.e., fields in which the conditions are discontinuous from point to point. An example might be given by the individual particles of sand in a sandstorm, each grain having associated with it a certain vector. Such a consideration, however, is seldom if ever made, as the problems generally dealt with by fields are on the macrophysical level and deal with continuous media. On the other hand, discrete fields may have a bearing in the microphysical domain but the mathematics of such discrete fields would be quite different. Microphysical phenomena show a degree of incoherence, randomness, that can be described only in statistical terms. Generally whenever a field is mentioned it is understood to be a continuous field. We may further distinguish between mechanical fields and non-mechanical fields. Any field that is defined in terms of the categories of classical mechanics, e.g., force, velocity, acceleration, displacement, stress and strain, is a mechanical field; whereas, a field not characterized only in any of these terms is a non-mechanical field. Non-mechanical fields have come into prominence with the rather recent development of field theories.

Of distinct importance in modern physics is the role of field theory (or rather field theories). A definition given by A. d'Abro is: "A field theory is a theory whose aim is to study the peculiar condition, or field, which is thought to pervade the ether of space in certain cases." (d'Abro 1, p. 72.) A field theory attempts to relate the properties of local fields to the conditions in free space. At first, the ether was supposed to be some kind of elastic medium and the corresponding field theory was a type of mechanism similar to the theory of elasticity. Every attempt to fit a mechanistic interpretation, however, to the experimental data (the final arbiter of scientific theories) met with serious difficulties and the concept of an ether with mechanical properties had to be abandoned. We now have a non-mechanical ether (for some, no ether at all) and a non-mechanical field theory of space, in which space (or space-time) itself is an active agent. Einstein writes: "Physical space and the ether are only different terms for the same thing; fields are physical conditions of space." (Einstein 4, p. 476.) The concept of an active space is due to the genius of Riemann, who formulated a new conception of space, a space devoid of rigidity, which could possibly have the power to take part in physical events.

The late appearance of field theories is attributable to two factors. First, the mathematical analysis of continuous fields was not possible without a knowledge of the properties of partial differential equations as developed by Cauchy, Poisson, Jacobi and others. The mathematical tools for the analysis of continuous deformations and distributions, however, did not in themselves suggest the possibility of a non-mechanical field theory. It is interesting to note that a field theory was not developed earlier in conjunction with the concept of a gravitational field and Newton's gravitational

* This review of field theory was prepared by the author to satisfy the expressed interest of several subscribers. It constitutes the first of a series of variously written summaries of topics new and important for valid over-all concepts. As is here made clear, field theory embraces physical (material and energetic) as well as superphysical (non-material, mathematical) elements in one whole, is applied today to physics and to biology, and may have important bearing upon human psychology.

The writer is a graduate student in philosophy at Columbia University. His undergraduate interests and studies (at the Massachusetts Institute of Technology) have been in science and mathematics. Mr. Whorf is a son of the well-known linguistics scholar, the late Benjamin L. Whorf, whose assistance as a frequent contributor to the first issues of MAIN CURRENTS was invaluable.

theory. Prior to Einstein, the ideas of gravitational fields did not suggest any condition of space (or of the ether) but were rather thought of in terms of a mechanical field of force surrounding matter. The tacit assumption of all of the earlier theories of an instantaneous action at a distance was unsatisfying philosophically and to remove the difficulty explanations were sought in the concept of some kind of field activity in the intervening medium. A field theory requires that an action be propagated through space at some finite velocity. It remained for Maxwell to provide a theory of electromagnetism which sought the explanation in the surrounding medium and not in material bodies acting at a distance. It is to be noted, however, that the problems dealt with by field concepts in physics can also be handled successfully by mathematical tools that make no reference to the intervening space or finite propagation; i.e., in potential theory. In the potential theory, on the other hand, it is customary to refer to a field of potentials and the philosophical difficulty of action at a distance still remains.

Maxwell's discovery of the electromagnetic field followed from the important electrical researches of Oersted, Faraday and Ampere. These researches showed clearly the intimate connection between electric currents and magnetic fields. In addition, Faraday significantly pointed out that "when a current was flowing along a wire, the most important aspect of the phenomen lay not in the current itself but in the fields of electric and magnetic force distributed throughout space in the current's vicinity." (d'Abro 2, p. 126.) Similarly, the concept of field explains the similar effects of solenoids and bar magnets. "The properties of the field alone appear to be essential for the description of phenomena; the differences in source do not matter." (Einstein 5, p. 138.) The next step was taken by Maxwell who combined the two fields, electric and magnetic, into a single electromagnetic theory and formulated the equations which are the mathematical laws controlling the changes of the electromagnetic field. These laws represent the structure of the field. The condition of the electromagnetic field can be determined at each point by two magnitudes: the electric field intensity E, and the magnetic field intensity H. This is perhaps not the preferable way, however, because even though the H field is uniquely defined at every point, the quantity H is a construct that is not defined in the same way as E; i.e., by force measurements. The equations often used to relate these two conditions, or fields, and give the structure of the electromagnetic field are (in the vector analytical notation):

$$(1)\ \operatorname{div} E = 0,\ (2)\ \operatorname{div} H = 0,\ (3)\ \operatorname{curl} E = -\frac{1}{c}\frac{\partial H}{\partial t}$$

$$(4)\ \operatorname{curl} H = \frac{1}{c}\frac{\partial E}{\partial t}$$

These equations, as written, refer to static fields; for the general condition of dynamic fields they have an emended form. From the field equations, Maxwell showed by purely mathematical methods that the well-known wave equation $\nabla^2 V = \frac{1}{c^2}\frac{\partial^2 V}{\partial t^2}$ applies to each component of the electric and magnetic vectors in the propagation of electromagnetic waves in the ether. The constant c gives the velocity of propagation and is independent of the wave length. Maxwell was then able to show, from theoretical considerations in connection with precise electrical measurements, that this velocity of propagation should be the velocity of light. This was later verified experimentally by Herz. Thus, the development of the theory of electromagnetic waves and subsequently the electromagnetic theory of light are direct results of the use of field concepts. In Einstein's estimation, "The theoretical discovery of an electromagnetic wave spreading with the speed of light is one of the greatest achievements in the history of science." (Einstein 5, p. 155.)

There is a great deal of similarity between the electromagnetic field and that of an elastic medium when submitted to deformations; e.g., the wave equation is satisfied by each component of the displacement in the theory of elastic vibrations, and is satisfied by the velocity potential of a perfect gas in the theory of sound. The similarity, however, is only superficial and the mechanical interpretations are cumbersome and often contradictory. Maxwell abandoned the attempt to fit a mechanical interpretation to the field and thus developed the first field theory in the modern sense. Einstein points out the differences between Maxwell's field theory and the mechanistic conception of Newton: "All space is the scene of these laws [Maxwell's field equations] and not, as for mechanical laws, only points in which matter or charges are present. . . . Maxwell's equations enable us to follow the history of the field, just as the mechanical equations enabled us to follow the history of material particles. . . . With the help of Newton's laws we can deduce the motion of the earth from the force acting between the sun and the earth. The laws connect the motion of the earth with the action of the far-off sun. The earth and the sun, though so far apart, are both actors in the play of forces. In Maxwell's theory there are no material actors. The mathematical equations of this theory express the laws governing the electromagnetic field. They do not, as in Newton's laws, connect the happenings *here* with the condition *there*. The field *here* and *now* depends on the field in the *immediate neighborhood* at a time *just past*." (Einstein 5, p. 152.) A difficulty arises in connection with Maxwell's field equations, however, due to their mathematical character. As a result, these laws break down in the presence of matter or electric charges. In mathematical terms the situation is this: when the divergence of a vector is zero in a certain region (equations 1 and 2) there can be no sources or sinks in that region. Consequently, Maxwell's theory was unable to predict or account for the dispersion of light on passing through a transparent medium such as glass. In the dispersion phenomena the angle of refrac-

tion depends on the wave length; whereas, with Maxwell's wave equation the velocity, and hence the angle of refraction, is independent of wave length.

To account for these difficulties, Lorentz in his electromagnetic theory assumed that electricity was atomic and that matter was built up out of more or less complicated groupings of electrons. With Lorentz we have a dualistic conception with, on the one hand, a continuous non-mechanical field, and, on the other, matter, represented by electrons and photons, whose motion is governed by the laws of mechanics. Thus, Lorentz provided us with two realities: matter and field. The field and the electrons are not unrelated, however, for the presence and distribution of electrons affects the field; and conversely, the field though non-mechanical in turn exerts forces on the electrons. This force of the field Lorentz calls the "ponderomotive force." This dualism, which to some is unsatisfactory, has engendered numerous attempts to provide a fusion of the categories of mechanics and electromagnetics; of matter and field. Any theory which thus attempts to interpret all physical manifestation in terms of non-mechanical field magnitudes is called a "pure field theory." An attempt by Abraham to provide a pure field theory based on the Maxwell-Lorentz electromagnetic field theories has been discarded due to both experimental and theoretical considerations. It appears that, for these and other reasons, any attempt to form a pure field theory solely on the basis of the Maxwell-Lorentz theory is precluded.

The consideration of the phenomena of the electrodynamics of moving fields led to the development of the theory of relativity. Among these phenomena is the famous FitzGerald contraction of a moving body in the direction of its motion, which was first revealed in the Michelson-Morley experiment. Lorentz, in order to account for this contraction, postulated a new set of relationships between space and time. These relationships, known as the "Lorentz transformation," were for Lorentz merely formal and not expressive of any properties of real space and time. Einstein, however, recognized that the Lorentz transformation may be construed as referring to the actual relations between space and time and from this position developed his special relativity theory. He worked out fully the relations between frames of space and time for observers with different motions. To Minkowski we owe the realization that these frames of reference are merely sections drawn across a 4-dimensional world common to all observers. Minkowski's world is a non-Euclidean 4-dimensional continuum and from the point of view of the relativity theory, time as well as space is changed in passing from one frame of reference to another.

There is achieved a great simplification and fusion of physical magnitudes with the substitution of a 4-dimensional space-time for the old 3-dimensional space and separate time of classical physics. Thus, the conservation of momentum and the conservation of energy become in the 4-dimensional world one law of conservation. Similarly, there is a fusion of the magnitudes of force and work, of electric current and charge; the separate electric and magnetic fields become one electromagnetic field. The 4-dimensional electromagnetic field is characterized by a single 4-dimensional tensor in place of the 3-dimensional electric and magnetic field quantities, and Maxwell's four equations are replaced by only two equations.

In the special relativity theory the Minkowskian space-time is flat, rigid and undeformable. Einstein shows that we cannot distinguish between rest and uniform motion as each are represented by a straight "world-line" made up of point events. The special theory is as dualistic as Lorentz' because both matter and field are considered fundamental. The special theory, however, is not confined to electromagnetic considerations alone, but also has applications to the problem of gravitation. Minkowski's space-time is such that a velocity exceeding the velocity of light *in vacuo* is impossible. The constant velocity of light is a fundamental assumption of Einstein's special theory. This precludes the possibility of any action at a distance in gravitational phenomena. Einstein in considering the problem of gravitation was led to the formulation of the general theory of relativity. He assumed that the structure of space-time was modified by the presence of matter, resulting in a curvature of space-time in the region surrounding matter, and that this variation in structure is responsible for the gravitational field. Einstein's gravitational field is thus a geometrical interpretation of the properties of 4-dimensional space-time and is referred to as a "metrical field." The metric used is a general Riemannian metric which characterizes a space of Riemannian geometry. Riemannian space, though non-Euclidean, is locally Euclidean; i.e., Euclidean in infinitessimal regions. Einstein's field equations, expressed as a set of ten lengthy differential equations, give the law of variation of structure of space-time due to the presence of matter, or the distribution of changes in the gravitational field. The geodesics of space-time determine the gravitational field and determine the paths of light rays. Einstein's general theory of relativity is clearly a field theory but it is not a pure field theory, since in addition to fields we have to consider matter in the forms of electrons, photons and the like. Einstein, however, is opposed to this dualism. He writes: "From the relativity theory we know that matter represents vast stores of energy and that energy represents matter. . . . By far the greatest part of energy is concentrated in matter; but the field surrounding the particle also represents energy, though in an incomparably smaller quantity. We could therefore say: Matter is where the concentration of energy is great, field where the concentration of energy is small. . . . There is no sense in regarding matter and field as two qualities quite different from each other. We cannot imagine a definite surface separating distinctly field and matter. The same difficulty arises for the charge and its field. It seems impossible to give an obvious qualitative criterion for distinguishing between matter and field or charge and field. . . . Could we not reject the concept of matter and build a pure field physics?

What impresses our senses as matter is really a great concentration of energy into a comparatively small space where the field is extremely strong. In this way a new philosophical background could be created. Its final aim would be the explanation of all events in nature by structure laws valid always and everywhere. . . . This new view is suggested by the great achievements of field physics, by our success in expressing the laws of electricity, magnetism, gravitation in the form of structure laws, and finally by the equivalence of mass and energy. Our ultimate problem would be to modify our field laws in such a way that they would not break down for regions in which the energy is enormously concentrated." (Einstein 5, p. 258.) He then proceeds to say that this program has not yet been carried out convincingly and consistently. Its possibility remains to be a matter of future determination.

In spite of the continuing dualism between matter and field, an important achievement of Einstein is the demonstration of the essential equivalence of mass and energy. This equivalence is expressed by the equation $E = m c^2$. As a result, all physical phenomena are reducible to energetic terms, although, as yet, the laws have not been found that are applicable to both macroscopic and microscopic domains.

The field theories so far considered do not include a common mathematical formulation of the electromagnetic and gravitational fields. These two fields, though possessing many similarities, contain important differences: the gravitational or metrical field is a geometrical interpretation of the structure of the 4-dimensional space-time continuum, the electromagnetic field, on the other hand, depends on the introduction of the electromagnetic tensor. This tensor might be thought of as some kind of foreign intrusion, the source of which is unknown. The attempt to secure a fusion of these two fields by some primary field property of the universe constitutes the search for a "unified field theory." The success in obtaining a fusion of the electrical and magnetic fields by passing from a 3-dimensional space to a 4-dimensional space-time has suggested the possibility of realizing the fusion of the electromagnetic and gravitational fields by extending in some way the 4-dimensional continuum. Thus, Kaluza attempted to secure the fusion by the postulation of a fifth dimension, the geodesics of which would combine the motion of a mass in the gravitational field and the motion of an electron in the electromagnetic field, Weyl, on the other hand, does not introduce any extra dimension but rather an increased variability of the structure of the continuum. Weyl's theory was extended by Eddington who employed a topological point-event system in place of any metric. Einstein, however, after attempting a different direction, is now reported to be working on a modified form of Kaluza's theory seeking the unification in a "space which exceeds Riemannian space in wealth of structure." (Einstein 4, p. 482.) He retains the 4-dimensional metrical space-time but introduces field magnitudes of a 5-dimensional character.

In connection with unified field theories there remain many unresolved problems. In addition, serious difficulties arise in connection with the advance of the quantum mechanical point of view, where, in the microphysical realm, phenomena present a discontinuous and incoherent character that must be alalyzed by statistical methods. Usually the coherence of physical phenomena as viewed from one scale of magnitude (the macrophysical level) are incoherent as viewed from another scale of magnitude (the microphysical level). Gustaf Strömberg defines coherence in the physical world as "that characteristic of the structure which describes the more or less permanent relationship between phenomena in different parts of space at approximately the same time, or a regular sequence in the changing phenomena at approximately the same region of space." (Strömberg 6, p. 323.) Coherent phenomena are, in principle, expressible in rigorous mathematical terms. These mathematical terms include the structure laws of fields. The success of field concepts as used at the macrophysical level thus reflect a high degree of coherence in physical phenomena at that level. An important consequence of the use of field concepts is that phenomena cannot be treated in isolation or relation to other phenomena without regard for the whole field of activity in which they are located.

The remarkable successes of the use of field concepts (as well as other physical concepts) in explaining, predicting, and correlating extensive physical phenomena has quite understandably led to the extension and extrapolation of their use into other domains of knowledge and more especially in biology, psychology, sociology and medicine. Many of these extra-physical uses of physical terms, however, have led to confusion and have at times been gross misapplications. This has often been due to the use of the concept out of context, or stripped of its precise meaning, or even with an entirely new meaning appended in order to fit its use into some preconceived framework. Another source of difficulty is the tendency to apply *ad hoc* reasonings and to infer more than is warrantable. Furthermore, tacit assumptions may be either justifiable or untenable and unless brought into the light of close inspection may result in serious limitations and error. Considerable caution, therefore, should be exercised. It is not to be supposed, on the other hand, that because of the inherent difficulties, no attempt should be made to make such extensions and to establish cross-connections in order to keep physics "pure." On the contrary, just such efforts, if properly conducted, should lead to many important consequences and increased understanding. It is quite reasonable to expect that the notion of field will have valid reference in other domains and there are many indications that such is the case. It is important in this extension of field concepts to bring along suitable operational techniques for the determination and measurement of the field in question, as well as an awareness of the difficulties and pitfalls. These techniques may not always be identical with those used in physics but there must be a unique set of operations which defines the concept.

A significant application of field concepts to biology has been made by H. S. Burr of Yale University. (Burr

3.) In considering the problem of the extraordinarily precise design and organization of the nervous system as well as in the whole of living organisms, Burr recognized that the forces that are able to exact this precision must be extremely powerful and, moreover, they must be of such a character as to control both local events and the unfolding and growth of the whole pattern. He suggests that these forces might be the same as are associated with design in the material universe: either gravitational, electromagnetic, or nuclear. He writes: "Of these, gravitation, although it has influence on growing things, is not strong enough to establish pattern, and nuclear forces, probably the most powerful known, operate over such exceedingly short distances as to be largely irrelevant to the problem of organization. There remain, then, electromagnetic forces as the determiner of design in the universe." (Burr 3, p. 89.) If electromagnetic forces are effectual organizers of design in living organisms, then, we should expect to find a one to one correspondence between the pattern of the electromagnetic fields and the organic form; e.g., we should expect a correspondence between an axis of the field and the longitudinal axis which is characteristic of the nervous system of a vertebrate. Burr, through suitable techniques (of the measurement of potential differences in living things), has been able to demonstrate the following: 1) that steady-state potential differences exist in living things, 2) that these potential differences are not chaotic but exhibit relatively stable patterns indicative of rather permanent fields, 3) that the pattern of the electric field bears a close relationship to the pattern of the organic form, 4) that the design in some way reflects the field; e.g., in certain cases the determination of the field potentials enables the prediction of future growth and, moreover, shows a relationship with the genetic constitution. Furthermore, the evidence indicates a relation between the local fields in an organism and the general electrical characteristics of the troposphere. Burr's work, though not completed, clearly indicates the importance of a relationship between field properties and the design and organization of living things, and that field concepts are important for an understanding of living organisms. Though the origin of the field is not known it reveals the design, symmetry and growth pattern of the organisms. The problem of the origin of such coherence in the biological domain is considered by G. Strömberg who proposes a solution in his theory of emergent energy. He postulates a non-physical world in order to explain the organization in the living world and the relationship between mind and matter. The interaction between physical and non-physical phenomena is possible, due to a class of "intermediate elements" among which are photons and electrons. Regarding the design of living organisms, he emphasizes the need for the concept of a guiding field. He writes: "In living organisms a particular type of coherence in space as well as in time is clearly evident. The coherence in space is often called *organization*, and the coherence in time is often described as a *development* towards a well-defined, predetermined structure. The highly coordinated structures, so clearly manifested in the higher animals, can not be the result of the electric fields in the atoms and molecules and chemical substances of which the animal is built. A *coherent guiding field* of highly specialized properties must be postulated to account for the structural and functional characteristics of the animal. In the embryonic development of a number of animals, Hans Spemann (*Embryonic Development and Induction*, Ch. XV, Yale Univ. 1938) has shown the necessity of assuming the existence of a 'field of organization,' which spreads from a definite point in the embryo and induces the formation of nerve tissue and the rudiments of the highly organized nervous system. A very simple case of the effects of a 'living field' is offered by the transformation of a blastula into a gastrula, which occurs in the embryonic development of most animals, a transformation which in a very striking way shows the highly coordinated effects of a guiding field extending over the whole embryo. Such fields can in no way be explained by forces originating in the matter of which the embryo is built or by forces emanating from the individual cells." (Strömberg 6, p. 330.) For Strömberg the sources of these "living fields" are in intermediate elements which "have a physical aspect expressible in terms of the space-time structure of their associated fields, and they have also a non-physical aspect, which is manifested in many ways, particularly as a purposeful development and, for certain nerve cells, as phenomena in our consciousness." (Strömberg 6, p. 331.)

Another characteristic of many organisms which is suggestive of the operation of fields in vital processes is to be found in the process of cell-division by mitosis. In the mitotic process the role played by the centrosomes and the patterns reflected in the protoplasm (the astral radiations and spindle of radiating fibers) point to the operation of an organizing field which is essential to and apparently controls the whole process. For these and many other considerations; e.g., of the unique organizations of form in crystals, plants, and animals (c.f. D'Arcy Thompson, *On Growth and Form*, Macmillan, 1942), or of bird flight and migration it would appear that behind the multiplicity of form there is operative some kind of field activity; that living organisms in some way reveal the properties of space-time.

When we come to a consideration of man and those phenomena that appear to be characteristic of man as distinct from the animals, we should not expect, on the other hand, to find an irrelevence of field concepts. In fact, an increasing fund of evidence in psychology and especially parapsychology (the division of psychology which deals with paranormal effects) seem to require for their explanation the use of field concepts. The use of field concepts in this connection, however, is difficult due to the lack of precise mathematical formulations in the way of field equations. The data of parapsychology in particular are so far only treatable in statistical terms. The use of field concepts seems called for by the nature of the evidence which presents

problems that are not readily explicable in mechanical or other terms. Among the phenomena now treated in a systematic and experimental way in parapsychology are included telepathy (the perceptual contact of one mind with another without the aid of the senses), clairvoyance (the paranormal perceptual contact with objects as independent of telepathy), precognition (the direct perception of future events) and more recently psychokenesis or PK (the influencing or moving of objects without physical contact). The chief centers for research into the possibility or existence and dynamics of such phenomena include the Society for Psychical Research (London), the American Society for Psychical Research, the Institut Metapsychique International (Paris), and the Parapsychology Laboratory at Duke University. The publications of these institutions are enlivened with description and accounts of cases of spontaneous telepathy and like phenomena, as well as of careful experiments including the data and analyses of that data. It is not feasible to give an appraisal of the experimental methods and results here, but the evidence seems to have sufficient merit to render such explanations and declamations as coincidence, faulty statistics, loose methods in eliminating sensory clues, etc., grossly inadequate reasons for a dismissal of such phenomena. Inadequacies and errors have no doubt been made but the experimenters have exercised the strictest precautions in order to obtain data that were reliable and as far as possible indicative of the dynamics involved. Accepting as possible, then, that man in his mental or psychic behavior does possess or exhibit processes that must be labeled "paranormal," rather than ignoring them, we should consider possible explanations and interpretations. J. B. Rhine at Duke University has emphasized the apparently extra-physical properties of telepathy and extra-sensory perception. In so far as tested these phenomena appear to be independent of distance and time. Strictly psychological explanations appear to be over-simplified and inadequate; e.g. W. Carrington's associationist interpretation. Among the variety of interpretations offered are included: 1) physical interpretations, which include various extensions of Sir William Crooke's theory of "brain waves" conveyed from object to percipient, 2) monistic systems, which regard all reality as ultimately psychic, and 3) dualistic interpretations, which postulate a mental realm distinct from the physical realm. There are unresolved difficulties attending all of the different interpretations. The inconclusive state of affairs is rather to be expected and can be attributed to the difficulties of repeatable experiments, the subtlety of the operations involved, and the relatively recent development of the systematic study of the subject — not to mention the obstacle of the ingrained notions of the older physical science. If clairvoyance and psychokenetic effects are demonstrable they would seem to indicate a preference for a dualistic interpretation, which would also necessitate the determination of the *modus operandi* of mind-body interactions. It is suggested that if we extend the use of field concepts to account for these phenomena of parapsychology, which is not unwarrantable, the postulation of a "mental field," which is associated with the human brain and mental processes and which permeates space-time, would provide a basis for a field theory. The mental field would provide the *modus operandi* of perceptual contact with other minds and objects; whereas a sort of mental ponderomotive force might be operative in psychokenesis. None of the phenomena of parapsychology or of other psychologies (notably Gestalt and depth psychologies) appear to be incompatable with such a field theory. The mathematical explication might (or might not) involve the properties of a multidimensional geometry. All this is suggestive of work that might be done. Is it not reasonable to expect that a broad field theory can be formulated in terms, say of matter (energy), life (as organization, growth, sentience), and consciousness (self-consciousness and those properties distinctive of man as man), which would harmonize and help to integrate the vast phenomena of the physical, biological and psychological worlds?

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THE RECONSTRUCTION OF HUMANITY

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Editor's Note

The following pages present (by kind permission of author and publisher) a careful abstract, and the entire argument, of the most recent work (Beacon Press, Boston, 1948) of one of the eminent scholars of our time. In 1949 the book will appear in French and German translations; in Swedish and Spanish shortly. The British edition is in preparation.

There is no work comparable to it, and no abstract can do it full justice. For the author traces our troubles, and our hope, back into our failure to recognize the true sources of human good in man's higher self; and he does so on evidence to which the behaviorist and physicalist too often remain stubbornly blind, and which many religionists formalize and isolate. This — man as a creative force — has long been Sorokin's theme. He renewed it as recently as in his *Society, Culture, and Personality*, 1947, but in the volume here abstracted he extends the documentation into new fields, and draws upon advances in knowledge reported in the *Journal of Parapsychology*, MAIN CURRENTS, and elsewhere from the fresh frontiers of learning. The abstract is the work of E. B. Sellon. F.L.K.

Part I — QUACK CURES FOR WAR AND IMPOTENT PLANS FOR PEACE

I. Political Cures: Democracy; The United Nations; World Government. II. Economic Cures and Plans: Capitalism; Communist, Fascist, and Socialist Economies. III. Scientific, Educational, Religious, and Other Cures and Plans: Schooling, Scientific Discoveries, and Technological Inventions; Religion; Legal and Ethical Cures; Prosperity; The Fine Arts; Other Cures; Conclusion.

Among the most popular plans for eliminating war and for establishing lasting peace are political prescriptions, [which] claim that through a change of certain political conditions the disease of war can be cured and peace be ensured.

A host of men and women are convinced that a republican and democratic system of government guarantees peace and eliminates war. There is no doubt that a genuine and virile democracy does offer a potent cure for many social troubles. However, if democracy is contaminated by poisonous elements its therapeutic power largely evaporates. Virtually all the democracies of history have been vitiated by many other elements incompatible with the essence of genuine democracy, [which] explains why so-called democratic political regimes have hardly ever exerted a restraining effect upon war. A long series of well-ascertained facts demonstrates that democratic nations have been no less belligerent than monarchic and autocratic ones. If anything, the frequency of wars is slightly higher in the totality of the democratic countries. Furthermore, before 1914 the twentieth century was more democratic than the previous centuries of Western continents. Yet this century has proved to be the most belligerent and bloody of all. The total body of evidence demonstrates that there is no close casual relationship between wars on the one hand and autocratic or democratic political regimes on the other.

Another fashionable type of cure for war is the United Nations. However, there is little reason to believe that the United Nations will fare better than the League of Nations. The United Nations Organization is shot through and through with cancerous self-contradictions. The organization of its voting units is devoid of any consistent principle. Self-contradictory are also its powers and functions. Its decisions are not mandatory. Likewise the social and cultural environment of the United Nations is hardly favorable to its growth. As the highest tribunal of the ethical conscience of humanity it cannot function because of the defects of its own organization; nor can it function as a moral force in the unmoral and cynical world of today. As a power machine it cannot work successfully because it lacks the necessary power. Having neither moral authority nor adequate physical power, it cannot perform the

miracle of eliminating war. The roots of its failure are deep in the very soil of contemporary society and culture.

This conclusion is beginning to be shared by an ever-growing number of people. Their increase accounts for the movement in favor of a world government.

As part of a vast ensemble of social and cultural changes necessary for the elimination of war, some sort of world government is indispensable. Taken alone, however, without other changes, it would offer no better an antidote for war than democracy or the United Nations. A purely external unification of all mankind under the sovereign rule of a world government would merely substitute "civil" wars for "international" wars.

In our economically minded age various economic cures for war are popular. Among these a restoration of the capitalist economy of "free enterprise" is regarded by many as a sure antidote for war. This prescription has several fatal weaknesses. First, the allegedly peaceful capitalist system of economy did not prevent the First World War, which was a child of the imperialist economy of competitive free enterprise. Its second weakness is attested by the very fact of the decline of capitalism during the twentieth century. The establishment and rapid growth of big corporations invalidated private property, shattered authentic capitalism, and inaugurated the fatal decline of capitalist economy.

By its very nature the culture of capitalist and corporation economy is economically minded, materialistic and hedonistic. Its paramount values are embodied in wealth and material comfort. Such a culture inevitably generates conflicts. The demand for these values is far greater than the supply, and this scarcity leads to continuous and bitter struggle. This clearly demonstrates that capitalist and corporation economies are utterly unable either to reduce or to eliminate war.

With the decline of capitalism, and the rise of totalitarian systems of economy, various brands of the latter are offered as radical cures for war. But the recently emerged communist, nazi, fascist, socialist and wartime varieties of totalitarianism have shown themselves to be inherently militant in their domestic relations and in their international relations. They are the offspring of war and other emergencies. Hence they cannot be peaceful systems.

The most potent panacea for war is held by many to be education, in the sense of literacy, schooling, science, and technological inventions. If education had been purely constructive, if science and technology had not been misused, they might have constituted a potent remedy.

Unfortunately, [because of] contemporary misuse, these disciplines neither eliminate or even reduce wars. The highly literate, scientific, and technological twentieth century has been thus far the bloodiest of all the twenty-five centuries of Western history since the rise of ancient Greece.

The following figures summarize the relationship between wars, revolutions, scientific discoveries, and technological inventions during the centuries in question:

Centuries	Index of Magnitude of War (Measured by War Casualties per Million of Europe's Population)	Index of Magnitude of Internal Disturbances in Europe	Number of Universities and Colleges, Technical Schools, and Theological Institutions in the Western World	Number of Such Institutions Founded	Number of Scientific Discoveries and Technological Inventions per Century
II	2 to 2.9	763	5	5	12
XIII	3 to 5.0	882	18	13	53
XIV	6 to 9.0	827	30	12	65
XV	8 to 11.0	748	57	27	127
XVI	14 to 16.0	509	98	41	429
XVII	45	605	129	31	691
XVIII	40	415	180	51	1574
XIX	17	766	603	423	8527
XX (1900-1925)	52	295	753	150	862 only for 1900-1908)

The foregoing data show a constant multiplication of scientific discoveries and inventions from century to century, and a rapid and uninterrupted increase in the number of institutions of higher learning. The data demonstrate also that war has not declined but, with some fluctuations, has sharply increased as we move from the twelfth to the twentieth century. These inductions demonstrate clearly that neither the growth of school education nor the multiplication of technological and scientific discoveries has led to a decline of wars and revolutions. The explanation is that these alleged cures are either inherently impotent as remedies for social conflicts or that they have been misused in such a way as actually to promote these calamities.

This conclusion is supported by a vast body of other evidence. The evidence proves (1) that with an increase in education, crime has not decreased; (2) that there is a very remote relationship, if any, between education, I.Q., school grades, and other forms of measured intelligence, on the one hand, and egoism or altruism and antisocial or cooperative traits, on the other; (3) that even the intellectual elite have hardly been ethically superior to the rank and file.

The highly dangerous, antisocial effect of misapplied science and technology is now evident to everyone. A morally and socially responsible science and technology, a system of education inspiring human conduct with love and man's intellect with true wisdom would indeed promote creative peace. But in their present form they cannot perform this function.

If Christianity and its norms of conduct were really practiced by Christians, and if Confucianism and Taoism, Hinduism and Buddhism, Judaism and Jainism, Mohammedanism, and other religions, with their moral commandments, were actually realized in the overt behavior of their followers, then they would exert a decisive influence upon the inhibition of war. The leading religions have, however, failed in [this] cardinal point. This is especially true of Christianity during the last few centuries. The most belligerent, the most power-drunk section of humanity has been precisely the Christian Western world. Christianity has not been able to eliminate war or to make Christians less belligerent than non-Christians. As long as the chasm between preaching and practice remains, there is no reason to believe that the religions of the present time or of the future can eliminate war and ensure a lasting peace.

What has been said of religion applies to law and ethics. Legal and moral norms can be effective factors of peace only if they are practiced and enforced. In general, if a law or ethical norm is not deeply rooted in a person's convictions and in his emotional and volitional nature [it] is doomed to be ineffective, no matter how rigorous the external enforcement.

Only altruistic, ennobling and just law norms, firmly rooted in the inner nature of human beings and actually practiced by them, can constitute effective factors of peace and inhibitors of war. Such norms are possible only under certain cultural and social conditions. What these conditions are will be discussed later.

Part II — INSUFFICIENT FACTORS OF ALTRUISM

IV. Altruism: Its Forms, Gradations, and Creativity: No Peace or Survival without Altruism; Definition, Forms, and Gradations of Altruism; Varieties and Methods of Creative Altruists; Altruistic Forms of Social Organization and Relationships; Conclusion. V. Insufficient Factors of Altruism: The Biological Nature of Man; Somatic Factors of Altruism and Egoism; Intelligence; Religious, Ethical and Political Ideologies; "Emotional Stability;" Economic Conditions; Similarity and Dissimilarity; General Conclusion.

Most of the preceding plans discussed barely mention an increase of altruism as a condition of lasting peace. They put their trust in some specific remedy which is supposed magically to create a harmonious society out of a gang of murderers and double-crossers. Yet no peaceful or creative society could be made up of wholly egoistic members.

Without any pedantic definition, through our own direct experience we know what constitutes love or altruism. Real altruism begins when an individual freely sacrifices his rightful interests in favor of the well-being of another. It is freely chosen and the purest form of free conduct known.

The sublimest form of altruism is formulated in the Sermon on the Mount: "Love your enemies, do good to them that hate you." Not only in the East but also in the West some persons have become great altruists through incessant deeds of love performed in the course of their daily work as laborers, peasants, teachers, doctors, scientists, artists and philosophers. The great ascetics, true religious leaders and mystics perform the functions of highest altruism through striving to achieve a union with God, and thus embracing in love the whole of humanity and the whole cosmos. Thus there are many types of altruistic persons and many ways to become altruists. Since genuine altruism manifests itself not only in ideology and speech reactions but also in overt actions, its social manifestation assumes some form of co-operative organization involving mutual aid and free from every competitive element.

Is altruism rooted in the biological nature of man or is it an acquired form of conduct? All in all, the human organism seems to contain both altruistic and egoistic forces. Thus we face the necessity of seeking the factors of altruism and egoism not in this or that single factor, but in the total systems of values of persons and groups, that is, in their entire cultural and social environment and in the entire make-up of their own personalities.

Part III — CULTURAL FACTORS OF ALTRUISM AND EGOISM

VI. Two Basic Principles: Indivisible Sociocultural Trinity; Sociocultural Integration. VII. What Needs to Be Changed in Contemporary Culture — and Why: What Is Pathological in Its General Nature; Suggested Changes. VIII. What Is Pathological in the Main Compartments of Our Culture: Science and Technology; Religion and Philosophy; Law and Ethics; The Fine Arts; General Conclusions on the Transformation of our Culture.

The fundamental shortcomings of the proposed cures for war consist not only in the fact that they analyze single isolated factors, but also in their disregard for the indivisible unity of the three aspects of sociocultural phenomena: cultural, social, and personal. Thus if we wish to eliminate wars and establish a creative altruistic order, we must modify simultaneously our culture, our social institutions, and the personality of our citizenry in an altruistic direction.

Let us now see whether contemporary Western culture is in need of such a radical reconstruction.

In accordance with its major premise, namely, that the true reality value is sensory and that there is no supersensory reality value, the scale of values of our culture is fundamentally materialistic, hedonistic, and utilitarian. This philosophy generates egoistic forces through the degradation of all cultural and social values and the value of man himself to the level of mere sensory material things. The conflict-breeding consequences of such a degradation are all too evident. If man is a mere complex of electrons and protons, or a mere perverted animal, then why should we show any regard for him?

The same homicidal conflicts are generated through the excessive "relativizing" of values and norms. Even the boundary line between what is sensorily true and false, right and wrong, beautiful and ugly is wholly relative. There is no norm that is universally binding upon Communists and Catholics, the rich and the poor, Negroes and white people, atheists and believers. Hence the mental, moral, religious, social, economic and political anarchy that pervades our life and culture.

If we desire to foster altruism, the major premise of our culture must be replaced by the more valid premise that the true reality is an infinite manifold possessing not only sensory but also supersensory, rational, and superrational aspects, all harmoniously reflecting its infinity. Further, the excessively relativized values of our culture must be replaced by a set of fundamental values and norms universally valid and unconditionally binding upon everyone.

In accordance with the major premise of sensate culture that the true reality value is sensory, it tends to reduce all cognition to sensory knowledge. The rational discipline of mathematical and syllogistic logic is admitted as a subsidiary means for the ordering of sense data, but this logic is viewed as a mere by-product of sense experience. Consistently with these premises, our culture developed science as a sensory, or empirical, system of knowledge of chemical, physical, and biological phenomena. No less logically, it denied any religious, theological, or metaphysical cognition of supersensory reality. In fact, it discredited all unconditional and universal standards.

With the progressive fading of universalistic standards, the moral, religious, and social irresponsibility of science and technology has grown apace. Left in this irresponsible position, in the hands of egoistic individuals and groups, they may easily destroy the very tree of life of mankind itself. If we wish to prevent such a catastrophe, science and technology must undergo a radical change.

In accordance with the major premise of the new culture that the true reality is an Infinite Manifold with sensory, rational, and metasensory and metarational aspects, sensory cognition must be supplemented by adding to it rational and intuitive cognitions. Alone, none of the three modes of cognition gives us the whole truth. The history of human knowledge is replete with wrong empirical observations, false logical reasoning, and misleading intuitions. Co-operating and correcting one another, they yield a more valid, more adequate and better tested truth.

Through this integration of all three modes of cognition the present war between science and philosophy, science and religion, religion and philosophy, will cease. In its turn this will bring genuine peace of mind to a humanity now lost in the jungle of contradictory half-truths. The science and technology of such a culture will pay more attention to social, humanistic, and personality problems. These will offer man the most effective techniques of self-control and self-development, making possible the attainment of an unprecedentedly high social and cultural level.

Being irreligious, our sensate culture has produced no major religion. The external shell of Christianity has grown during these centuries at the expense of its spirituality, ethical efficiency, and transfiguring power.

A similar fate has attended the integral and idealistic systems of philosophy. Only mechanistic, empirical, positivistic systems of philosophy have flourished in the atmosphere of sensate culture.

As long as religion and philosophy remain in this deplorable state, they can contribute little to the cause of solidarity and the elimination of conflict. To perform this mission, they must undergo a fundamental transformation. The dominant religions must stress their common basic verities and their common moral imperatives. If a person manifests his divinity through deeds expressing his love for God and man, whether he does this under the banner of Hinduism or Buddhism, Taoism or Confucianism, Jainism or Judaism, Christianity or Mohammedanism.

A similar transformation must take place in the prevailing systems of philosophy, [which] should clearly emphasize that there are nonmaterial, nonmechanistic, rational, and superrational aspects transcending the material appearance of sensory phenomena. They must cease the illogical relativizing of truth and other values that leads to the obliteration of the boundary line between truth and error. The relative has meaning only when contrasted with the absolute.

behavior of the believers. The sacredness of man and the ethical commandments enjoining love are limited in several religions to the circle of their own believers. Any true religion of the future must be universal in the sense that everyone, regardless of race or nationality or creed, is regarded as a sacred end value.

Its logical and empirical aspects religions must bring into harmony with existing science and logic, dropping what is obsolescent. In this way, religion, logic and science unite to form a single harmonious team dedicated to the discovery of the perennial values and to the proper shaping of man's mind and conduct.

There have been good and bad monarchies and republics; aristocracies and democracies. But even the good states are among the most egoistic of all institutions. Being the power machine par excellence, the state is designed first of all for defensive and offensive warfare with all the groups whose interests conflict with its own. The sovereign states have probably slain more people, in their international and civil wars, than any other social institution. Hence the institution of the state must be drastically remodeled.

The states should be subjected to the same universal ethical and legal commandments as apply to private organizations and persons. Negatively this means that they should be stripped of their sovereignty, especially of their right to wage war. The aforesaid prohibitions apply also to the world state to be created. Its legislative, judicial, and executive bodies should be composed not only of the representatives of the states but also of representatives of industry and agriculture, science, religion, and the fine arts [whose] presence would mitigate the militancy of the state representatives. Its enforcing apparatus should be limited to the necessary minimum of police power.

As a positive measure, a universal bill of rights, inalienable and inviolable for every human being, should embrace all the necessary conditions for decent material, educational, and moral standards.

The government of the states must consist of a combination of the elected representatives of the citizens and of those of agriculture, industrial management and labor, religion, science, the fine arts, and the professions. Since the function of the state should be social service, its representatives should not enjoy any special privileges or particularly high salaries. The state government should not pass any important law without a preliminary determination of the opinion of the citizens in the form of either the old-fashioned referendum or adequately organized polls. Thus direct democracy would be restored.

At present political parties have usurped the role of agencies for ascertaining the opinions and wishes of the electorate. They have monopolized elections, since there is no possibility of voting for candidates not nominated by the parties. Such political parties need to be radically transformed. The decentralization of the election of representatives from territorial districts, and their supplementation by representatives of industry, agriculture, science, religion, etc., would render the monopoly of elections impossible. Furthermore the technical facilities for obtaining a poll of public opinion [would] render the existence of our rigid political parties largely superfluous. Finally, a heightened sense of duty and social service would tend to free political leagues from the selfishness, corruption, and irresponsibility typical of present-day political parties.

A conspicuous inequality in economic or other privileges generates strife and enmity. In contemporary populations the economic chasm between the multimillionaires and the poverty-striken strata has [as its] consequence an ever-increasing class war. As long as this gulf persists enmity and strife between the haves and the have-nots are bound to continue.

This antagonism can be substantially mitigated by securing to every person a decent economic standard of living; limiting the amount of wealth possessed by any individual; reducing the chasm between the standards of living of the rich and the poor; deflation of the value of pecuniary wealth in the total scale of human values. Through remuneration of the real creators of wealth and penalization of its squanderers, these measures would stimulate the production of wealth and introduce peace and harmony into our interpersonal and intergroup relationships.

The suggested changes imply that the role of unrestrained competition in economic activities must be rigorously curtailed, being replaced as far as possible by non-competitive co-operation. It is scarcely possible for the rank and file of humanity to abolish selfish competition and pecuniary motivation entirely. But even for our society [their] role is highly exaggerated. In an idealistic culture people are bound to discharge faithfully their occupational functions from a sense of duty and self-respect, especially when the highest possible standards are secured for all, when each person engages in the occupational activities most congenial to him, when unhygienic and monotonous working conditions are minimized.

If the foregoing changes are carried out, and if the real causes of privately and governmentally managed economy are properly understood, then the hotly debated problem of these two types of economy resolves itself into a purely technical question rather than one of principle. Both types of economy are as old as human history itself, and each possesses neither great virtues nor numerous vices. The identification of each type with either equality or freedom is utterly unwarranted. The emergence and domination of each type are the inexorable consequences of definite causes. When a given organized group faces a grave emergency the governmental control tends to become more rigid and to expand. As the emergency passes and conditions become more nearly normal, the governmental controls tend to relax.

From this law may be deduced several practical suggestions. If we do not desire a totalitarian type of economic or political regime, we must strive to make the world free from grave emergencies, especially from wars, revolutions, famines, and major depressions. When economic functions can be faithfully and competently

Modern culture tends to regard all legal and ethical norms as purely manmade rules, devoid of any absolute principles [and] entirely relative and changeable. With the progressive disintegration of the universal norms, law and ethics have lost most of their efficacy in controlling human behavior from within. These sham norms must be replaced by a system of universal legal norms permeated by the true justice of the Golden Rule and the natural law. Likewise, our pseudo ethics must be replaced by the eternal moral imperatives of the Sermon on the Mount and by similar norms of all the great religions. Only such a law and ethics can become universal and binding upon all.

The basic conclusion reached is that the very roots, the major premise, of the tree of sensate culture are now hopelessly unsound. Under such conditions there is no possibility of establishing a harmonious cultural order. Our culture breeds germs of hatred, envy, and antagonism which engender endless wars, revolutions, and other bloody conflicts. For the sake of the very survival of humanity we must set about the task of rearing the temple of the new culture.

Part IV — SOCIAL FACTORS OF ALTRUISM AND EGOISM

IX. What Must Be Changed in All Social Institutions — and Why: Molding Power of Organized Groups and Institutions; Three Conflict-Breeding Properties of Our Institutions. X. What Must Be Changed in the Family, School, and Religious Institutions — and Why: The Family; The School; Religious Institutions. XI. What Must Be Changed in Our Political, Economic, and Other Institutions — and Why: Political Institutions; Economic and Occupational Institutions; Privately Managed and Governmentally Managed Economy; The Press, Radio, and Motion Pictures; General Conclusion.

Pronounced social differentiation, the competition of men and groups, and the contractual and compulsory network of our institutional relationships — such are three fundamental traits of all our institutions.

Within a given city there are thousands of different groups. If the values and norms of conduct of all these groups and strata were mutually harmonious their relationships would be peaceful, and their members would be impelled to practice altruism. Unfortunately, the values and norms of conduct of a given family, race, creed, state, or occupational group are frequently irreconcilable with those of other groups of the same category. And such a clash is not mere "prejudice and superstition:" It is an objective irreconcilability of the respective values and norms of Bilbos and Negro leaders; of Jews and anti-Semites; of communists and Catholics; of conscientious objectors and glorifiers of war, and the like.

Thus our overdeveloped differentiation inevitably generates interindividual and intergroup conflicts. Being a member of many groups, an individual receives from them opposing commands, norms and values. As a result of this incessant pressure he has little chance to develop an integrated self, with a consistent set of standards. These inner conflicts are responsible for unhappiness, growing cynicism, violence, criminality, and even suicide.

The first remedy consists in canceling one's membership in less important organizations with mutually conflicting norms. Unfortunately, an individual cannot terminate his membership in many groups: citizenship, membership in the family group, occupational or economic position. Hence the necessity for such a rearrangement of our group structure that antagonism is eliminated. This can be done when all groups and strata subordinate their values and standards to a set of universal values and of concordant norms of conduct. If all groups apply these norms in their ideology and their overt actions, then humanity will achieve real unity in diversity, and the individual will regain his integrity, happiness and peace of mind.

The second general characteristic of our social institutions is egoistic competition at the basis of our economic and political institutions. This principle is declared to represent the very nature of men and groups, the driving force of social progress and order, the heart and soul of our social system.

By the very nature of this principle, it breeds incessant conflicts. The greater the values involved, the more profound, unquenchable, and destructive the antagonism. As long as competition remains the foundation of our social life, there is little hope of eliminating conflicts.

In the field of ideology the conception of man as a purely egoistic creature should be dispelled and replaced by a more scientific conception of man as a creature possessing altruistic as well as egoistic propensities. The discoveries, inventions and major achievements in religion and ethics, law, philosophy, the fine arts, science and technology have not been due primarily to considerations of personal advantage. Creators of notable values have acted contrary to egoistic considerations, motivated primarily by a sense of the needs of their fellow men.

Deflated ideologically, egoistic competition must, moreover, *actually* be reduced. It is hardly possible to eliminate it entirely from the conduct of the majority of people, but it should and can be limited, being replaced in part by the opposite principle of noncompetitive co-operation and service.

However diverse, all human relationships can be grouped into three main classes: familistic, contractual and compulsory. Familistic relationships are permeated by mutual love and sacrifice; contractual relationships are marked by a voluntary agreement of the parties for their common advantage; compulsory relations involve coercion of the weaker party by the stronger.

The contractual structure of Western society has been fully developed. Unfortunately, in the course of their development these contractual relationships degenerated. Economic and other conditions deprived many parties of contractual freedom and converted many agreements into compulsory contracts made under duress. Contractual freedom of thought, speech, the press, association, religion and occupation has been steadily replaced by authoritarianism.

In the texture of our institutions and groups, the compulsory fibers should be reduced to the very minimum; pseudo contractual relations formed under duress must be replaced by true contractual ones; the familistic relations should be increased as much as possible, extending potentially over the whole of humanity.

Of all social institutions the good family has possibly been the most effective agency of altruism. It has transformed its members into a single entity, with a common fund of values.

Viewed from this standpoint, the contemporary Western family has increasingly failed in its main task. The principal reason for this is to be found in the growing transformation of the family from a familistic union into an implicitly egoistic contractual association of a male and female in the interest of pleasure and utility. The result is an increase of childless marriages, on the one hand, and, on the other, an atrophy of parental love and a growing indisposition to bestow the proper care upon children [who] are left largely to themselves, enjoying little parental control or guidance. Need we wonder, therefore, that in spite of the increase of nurseries, schools, and intellectual development, juvenile delinquency is on the increase? Society should not blame anyone but itself for these fruits of its family and marriage system.

The family must be restored to [a] place of dignity among the greatest values in human life. Its basic function, that of inculcating sympathy, love and loyalty in its members, must be restored and fully developed. The extension of altruism far beyond, to embrace all creeds, races, nations, classes and strata, will be a new distinction of the family.

The family is the first and most decisive molder of the personality and conduct of children. School institutions are the next. In addition to this educational function our schools perform a selective role as an agency that tests and selects individuals, assigning them to their proper social positions. This selective role of the schools is as important as their educational function.

Our contemporary school system is grossly defective in both respects. As an educational agency it fails to develop character and a sense of altruism. The schools of our sensate culture limit their educational function chiefly to training the intellect. They pay scant attention to engendering a social outlook. "Traditional" values are corroded by the acids of so-called scientific criticism. The distinction between right and wrong is shattered by a barrage of positivistic, materialistic, relativistic and mechanistic artillery. Students are "liberated" from their "superstitions and prejudices" without having these replaced by any genuine set of values.

Even as an agency of purely intellectual training, our contemporary schools leave much to be desired. They tend to cram the minds of the students with miscellaneous bits of information rather than to develop the powers of logical thought except in such departments as mathematics, physics and chemistry. They produce chiefly standardized specialists. The aridity in the field of the social and humanistic studies and in that of the fine arts is the nemesis for this concentration on technique instead of on substance. Defective also is the contemporary school system as a selective agency. Our institutions do not sift persons with highly socialized character from those with egoistic, cynical and weak characters.

Our schools must establish a carefully elaborated system for developing altruism in their pupils. They must instill in them a set of universal values and norms. Intellectual training must be reconstructed in the interest of developing logical thinking and a passionate search for the truth. Specialization must be supplemented by a broad general education [in] the immortal values of human culture in all its fields. Obsession with techniques must be supplanted by a deep insight into the essence, or substance, of the phenomena studied.

Thus transformed, the school will be one of the mainsprings of the constructive forces which make for peace, happiness, and genius.

Religion is a system of ultimate values and norms of conduct derived principally through superconscious intuition, supplemented by rational cognition and sensory experience. Its superconscious intuition makes us aware of the ultimate reality value, the Infinite Manifold, God. Virtually all the major religions have apprehended the ultimate reality value in a very similar way. The differences between the Tao of Taoism, the "Heaven" of Confucianism, the Brahman of Hinduism and Buddhism, the Jehovah of Judaism, the God of Christianity consist mainly in differences of terminology. Likewise, the moral commandments of all genuine religions are fundamentally identical.

In their rational and empirical ideologies religions naturally depend upon logic and empirical science. Since these are incessantly changing, religions change also in these respects or [become] obsolescent in these components. Religion as a superconscious intuition of the Infinite Manifold is perennial and eternal; as a rationalized system of theology, it is incessantly changing.

If we wish to build a truly great culture, we must create or recreate one or several great systems of ultimate reality. The existing major religions do not urgently need to be replaced or to be drastically modified. Their intuitive system of reality value and their conception of man as an end value are essentially valid. Similarly, their ethical imperatives call for no radical change.

What is needed, therefore, concerns not the essence of the great religions but its revitalization [through] two essential tasks: the recreation of a genuine religious experience, and realization of ethical norms in the overt discharged by both private groups and the state government, both systems can harmoniously coexist, each specializing in the particular fields in which it meets the economic needs of society more successfully.

The preceding sketch gives a sufficient idea of the kind of [social and cultural] transformation required [to] release forces of altruism, good will, and creative energy hitherto little exploited. If no single cultural or social factor can perform this task unaided, in their totality they can accomplish it successfully.

Part V — PERSONAL FACTORS OF CREATIVE ALTRUISM

XII. Our Incompetence in Effecting the Transformation of Man: The Role of Personal Effort in Creative Altruism; Inadequacy of Our Knowledge of Altruism and Its Techniques; Reasons for the Persistence of Our Ignorance.
XIII. Three Remedies: Increasing Study of the "Energies of Man;" Structure of Personality; Constructive Use of the Existing Knowledge of Man's Transformation.
XIV. Methods and Techniques of the Great Masters of Altruism; Techniques of Contemporary Psychotherapy; Control of Biological and Physical Functions; The Basic Principle of These Systems; Integration of the Sociological Egos; The Altruization of Man.

Part VI — WAYS OF REALIZATION OF THE PLAN

XV. How the Proposed Change Is to Be Achieved: How It Should Not and Cannot Be Achieved; How It Should Be Achieved; Can It Be Achieved?

If it is difficult for a person or group to be altruistic in a thoroughly selfish environment, one does not become altruistic automatically even in an environment permeated by kindness and generosity. Incessant personal effort is needed.

The question arises: How much do we know of the methods and techniques necessary to render ourselves and others less selfish and more altruistic, less heedless and more creative, less frustrated and more happy? At the present time this is the paramount problem of humanity.

When we take account of the existing theoretical and practical knowledge, we find that our knowledge in these fields is insignificant and our techniques wholly inadequate. If [they] had been available, mankind would have been able to avoid wars and other sanguinary conflicts. Humanity does not desire such catastrophes, but does not know how to prevent them. The same ignorance applies to the ways and means of increasing happiness.

Among the many reasons for the failure of Western science in these fields the following deserve special note. First, our [inadequate] knowledge and control of mental phenomena. The greatest puzzle for the human mind is the mind itself. The second reason is the concentration of Western science on the study of physical and vital phenomena, to the neglect of mental, moral, and superorganic phenomena. The third reason for our ignorance in this field is to be found in the conception of man as a mere physical or vital phenomena. The very existence of mind, consciousness, conscience, and will, to say nothing of the superconscious, has been either flatly denied or, at best, granted mere lip service. Contemporary science still regards man as a mere physical mechanism. Quite consistently, the scientific disciplines of our era have applied, for man's education and control, methods and techniques of the same mechanistic or materialistic nature. It is [these] that are predominantly applied by psychology, psychiatry, and psychoanalysis for the treatment of mental disorders. The same theories and techniques dominate our treatment of alcoholics, juvenile delinquents, criminals, and other derelicts. They are "cured" for the most part through extermination, confinement, or the application of therapies directed chiefly toward physical changes. Similar are the presuppositions of the contemporary "art of governing men" and of social control in general, of the education and modification of human beings and the reorganization of our social institutions. Sensation and perception, conditioned reflexes, pain and pleasure are considered the principal sources of learning. The techniques of moral and social education are chiefly physical coercion, reward and punishment, unconscious suggestion and imitation, conditioned response or habit, and persuasion. All these methods of education and control rely on coercion rather than on spontaneity, on egoistic self-interest rather than on disinterested social service.

Whatever field of education we take we find the techniques of education and of mental and moral transformation have been predominantly physical and mechanical, operating through the "unconscious" and only to a slight extent through the conscious phase of man's total personality. In this neglect of the forces of the conscious and particularly of the superconscious lies one of the basic reasons of our ignorance and incompetence in performing the task of rendering man's conduct altruistic.

Since, besides the complexity of mental phenomena, the main reasons for our helplessness are the neglect of these phenomena by science, the wrong conception of man and the socio-cultural universe entertained by this science, and the disregard of the existing body of Oriental and Occidental experience in the field of the superconscious, the first remedial steps evidently consist in the correction of these grave defects.

An incomparably greater proportion of scientific research and cognitive effort must be devoted to the study of the superorganic "energies of man," as William James called them, in all their personal, cultural and social manifestations. Next comes the replacement of the prevalent conception of man's nature by a more adequate conception, [whose] essentials are as follows:

Four levels of energies and activities can be distinguished in our total personality and behavior. First are the unconscious, purely biological energies, consisting not only of the libido and death instincts but of many biological drives irreducible to these two Freudian energies. The total quantity as well as the qualitative forms of these energies and activities vary according to the biological and sociocultural conditions.

Next come bioconscious energies associated with a set of biological egos in personality. Thus, when one grows aware of a pain and consciously strives to alleviate it, the purely unconscious energies assume a bioconscious form and involve a set of corresponding conscious biological egos. These bioconscious forces and egos are inherently neither antisocial nor social in character. If their propensities are satisfied in forms approved by the norms of law or religion they operate in harmony with the corresponding sociocultural egos.

Above these bioconscious energies and egos lies the stratum of conscious sociocultural energies, activities, egos, and thought. They are derived from the conscious, meaningful interaction of thinking persons in their col-

lective experience. A person possesses as many sociocultural egos and activities as there are sociocultural groups to which he belongs. Most of us have our family, nationality, political, religious, occupational ego, each different from the others. If the groups to which we belong are mutually harmonious, then our sociocultural egos are also harmoniously integrated into a single composite ego, free from inner conflicts and contradictions.

There is a still higher form of energies and activities, realized in varying degrees by different persons, namely, the superconscious. These constitute the supreme type of creative functioning, frequently designated as "the divine in man."

When the superconscious operates to a slight extent, its principal function is to integrate the multitude of bioconscious and conscious egos into some kind of unity. When the superconscious is fully operative, it acts as the supreme controller. This superconscious, or self, is "egoless" in the sense that all other egos lose their identity in the superconscious self as a superpersonal Infinite Manifold. The egolessness of the superconscious differs radically from that of the unconscious in that it is the source of creative achievement. Genuine creativeness demands something more than the operation of our conscious egos. This "something more" is the inspiration or intuition of the superconscious.

The as yet largely unknown "fission forces" of the superconscious can become the most decisive agency of man's self-control. What is needed is a concentration of humanity's efforts on unlocking the secrets of the superconscious as the realm of the most powerful, most creative, and most ennobling forces in the entire universe. This is the central problem of science and religion and of humanity itself.

Blinded by its materialistic, mechanistic, and empirical bias respecting anything "spiritual," or "religious," [Western] science largely disregarded the techniques of Lao-tse and Buddha, Christ and Saint Paul, the mystics, and other eminent altruists. If our "scientific educators" were indeed scientific, they would not have ignored the knowledge and experience of the foremost masters of self-control and moral education. To remedy the situation we must therefore first make a careful study of the aforesaid masters. On this basis we may then attempt to make new discoveries and invent new techniques looking toward the establishment of a nobler and happier social order.

[Even] our [superficial] knowledge of these ways and techniques discloses several things common to the methods of the Oriental and Occidental masters of self-altruization. Let us briefly note some.

These systems contain in themselves nearly all the sound techniques of modern psychoanalysis, psychotherapy, psychodrama, moral education, and education of character. Though control of biological and physical functions is only the first — and least important — task in the masterly systems of man's transfiguration, they do not overlook it. [Through] a wide range of techniques [they] successfully subordinated their biological unconscious and bioconscious drives to the control of the conscious sociocultural egos and especially to the superconscious in them. They succeeded not only in the control of these drives but in that of even the least controllable biological functions, such as breathing, the heartbeat and the like.*

The subjugation and control of the unconscious in man by his conscious will, and of the conscious sociocultural egos by the superconscious in man is the basic principle of these systems. The techniques of man's transfiguration were designed in conformity with these objectives and operated through the concentrated consciousness, will, and superconsciousness rather than through physical means and practices. The essentials are thus mainly mental (concentration and meditation).

These systems are equally worthy of attention for their aims and techniques for the altruization of man and his "adaptation" and "adjustment" to his fellow men. From their standpoint only a person who subjugates his biological part to his conscious part, and both to the superconscious, is considered to be an "adjusted" or educated person. As a preliminary condition they unanimously demand the liberation of a person from all forms of egoism and the development of a love for the Absolute, for all living beings. They all say that the practice of kindness and love is one of the best therapies for curing many mental disorders; for the elimination of sorrow; for the mitigation of hatred and other antisocial tendencies; and, above all, for the enoblement of human personality.

Their main technical rule is: only love and kindness generate love and kindness; hatred and enmity produce only hatred and enmity; selfishness breeds only selfishness. No creative explosion of the superconscious forces is possible until the minimum of love is achieved by creators, groups, and nations.

The proposed trilinear transmutation of man and his social and cultural institutions requires a veritable revolution of the minds and hearts of individuals and groups. The transformation should be carried on simultaneously along all three fronts: personal, cultural and social. The effortful transmutation of the individual may slightly precede the others. Quietly and unostentatiously, even secretly (as Jesus rightly stresses), one can carry on this self-education in altruism through thousands of specific actions as a parent, teacher, business man or laborer.

The second and third lines of attack consist in a well planned modification of our culture and social institutions through the concerted actions of individuals united in groups which, in turn, are merged in larger federations or associations. At present their tasks are twofold: first, to increase our knowledge and to invent better techniques for fructifying our culture and rendering human beings more altruistic; second, through these to draw up more adequate plans for the total process of transformation, to diffuse and propagate them.

* T. Brosse, "A Psychophysiological Study," *Main Currents in Modern Thought* (July 1946) pp. 77-84, for photographs and electrocardiograms. See Behanan's *Yoga: A Scientific Evaluation* (N. Y., 1937) which contains photographs and a report on similar findings.

NOTES & NEWS

INTEGRATIVE EDUCATION: A World Force*

Samuel P. Wetherill

Post-war educational policies — which is another way of saying educational policies needed to win the peace — have long seemed to the Philadelphia Committee to be of supreme importance in the development and implementation of which the University of Pennsylvania should lead.

It is, therefore, a cause of real satisfaction that our Associated University of Pennsylvania Clubs president, H. Dorn Stewart, has called for a report designed to explain in lay language the whys and wherefores of the philosophy and the movement becoming known as "integrated education."

Integrated Education implies:

First — That the sciences can be humanized.

Second — That motivations of conscience can be validated.

Quite evidently the subject leads to an inclusiveness not associated with specialized study, research, nor even with conventional classicism.

Also quite evidently integrated education is a goal, not a present achievement.

Integrated Education should supply intellectual and moral stability — needed bridges to the chasms between theory and practice, between preaching and doing.

The rapidity and thoroughness with which Western Civilization finds and cultivates its common interest with all residents on this little globe may yet decide the fate of mankind. The only route by which the ideologies and self-interest of East and West can meet in harmony, will be by mutual efforts to bring Western Science and Oriental Religion into a new accord.

By our over-emphasis on materialism we have alienated their highly developed spiritual dedication. By weaving more spiritual strands into the fabric of our own civilization and by refraining from imperialistic aggressions, we may yet win their confidence and friendship.

Your Philadelphia Committee is in hearty accord with Chairman McClelland's admonition that "to meet these responsibilities, 'the universities must recognize clearly that while the past few decades have shown extraordinary scientific and mechanical progress, there has been no corresponding moral or spiritual growth; that knowledge of the physical sciences has outstripped our knowledge of the social sciences, how men may live happily and profitably together.' "

The right to vote carries the obligation of self-culture. The people must, by being courageous and whole, make their government more efficient and a stronger bulwark against dictatorship. Human self-controls must make the world safe for science in support of world wide prosperity and a culture none has yet dared to envision.

The machine age now can provide the means for the production of all that the world can consume. Integrated Education wisely and soundly advanced may yet mutualize the will to employ the machine age to the end that there shall be starvation and distress for none and prosperity and happiness for all.

* Extracts from A Report to the 35th Annual Conference, Assoc. Univ. of Pennsylvania Clubs, Harrisburg, Pennsylvania, November 11, 1948, by the Chairman of the Philadelphia Committee. The author is the head of Wetherill Engineering Company, and a member of a well-known family of Pennsylvania Quakers. Thus he speaks as a man of business and public affairs, and as someone deeply concerned with the educational and spiritual roots required for a peaceful world society.

COMTE'S CONTRIBUTION

Few who have given the problem of integration a serious thought would qualify anyone else but an idealist to favor or support a program of integration. The more heartwarming it should be to know that even a scientist of the persuasion of positivism (and there are still a good many) could agree wholeheartedly in the aims of integration and justify integrated education. For, Auguste Comte (1798-1857), the author of positivism which, briefly, means science above all else, was an integration enthusiast. Comte achieved this point of view by stressing science in preference to the sciences.

In classifying the sciences into mathematics, astronomy, physics, chemistry, physiology (read biology) and sociology, Comte was concerned with encompassing knowledge and showing the interrelationships of all fields of knowledge. The individual science he defined rather rigidly. Yet he acknowledged that each encroaches upon the next. Mathematics, worst offender, is basic for all other sciences, while the positivist method pervades each and all. There is and should be, thus, interdependence on a large scale.

In being the father of sociology and a devotee of the *Grand Etre*, the Great Being, which is humanity or the totality of all men, living or dead, Comte also brought about the integration with the humanities by the backdoor, as it were. He may be against or indifferent to Kant; he may care nothing for the theory of knowledge; he may disparage the value of logic as an independent study; he may deride animism and metaphysics; — yet he assigned a place for them all in the grand manner of integration, even though as dead issues. Logic is logic in action; theology and speculation are stages; final causes vanish in the totality or complexity of the conditions of existence; the universe is humanized in the

conception of the world; and moral values are conditioned by the laws of man's environment.

Lévy-Bruhl suggested that Comte transposed the points of view of a metaphysical and rationalistic age. In so doing he only transposed the values but did not eliminate them altogether. To be sure, they lose their vitality in his system, but they are there. When he thus counseled the study of science as a whole, in addition to specialization in any particular science, he was expressing the desire of all those interested in integrated education. He achieved the same end in a way better understandable to the scientist who is still caught up in positivist thinking. What he appeared to destroy, he merely inverted.

These reflections just go to show that in the program of integration, positivists can join hands with idealists. Values are not lost; they may only become transposed or lose complexion at the most. So long as man is grasped and defined in the totality of his being, the values that point beyond him have a place in the scheme of things. They may not have the place assigned them by an idealist, to be sure. But their recognition as stages of development does by no means preclude their powerful emotional appeal. And perhaps some of us have not developed sufficiently to have fully emerged from the metaphysical stage . . . ? We nowadays see many a scientist revert even to the theological stage!

Kurt F. Leidecker

GENES OBSERVED AS PARTICLES

In *Science*, January 7, 1948, p. 8 *et seq.*, Daniel C. Pease and Richard F. Baker of the School of Medicine, University of California, describe and illustrate results of "a relatively simple method of cutting and mounting sections sufficiently thin for effective use with the electron microscope," in connection with their efforts to photograph chromosomes at sufficient magnification to determine and measure individual genes. They concluded their report: " . . . it seems reasonable to believe that the discrete particles (here discussed) are genes."

The salivary chromosomes, of the fruit fly, here used, are highly specialized, "not ordinary chromosomes with single chromomere granules spaced along a single chromonemal thread. Instead, each primordial chromosome has reduplicated itself many times over. The end-product is a giant multiple chromosome made up of hundreds, if not thousands, of identical units."

On the publication date of the article above described, the New York *Times* reports an announcement of final identification of genes in the salivary glands of *Drosophila melanogaster* as being "thin, double-pointed, spindle shaped particles, one one-hundredth of a centimeter long, and one one-millionth of a centimeter wide." We shall report in MAIN CURRENTS with finality on these figures when reported quite dependably. Meantime genes appear to be established by observation as individual forms with a length ten thousand times their width, thin indeed.

A BOOK A YEAR

Rutgers University

To counteract academic overspecialization and to provide "a common intellectual experience for the entire university family," students and faculty at Rutgers University next week will start a "Book-of-the-Year" reading plan.

Everyone on the campus from deans to undergraduate freshmen will be asked to read *Patterns of Culture*, an anthropological study of contrasting societies, by the late Dr. Ruth Benedict. First suggested last year by Dr. Houston Peterson, chairman of the Department of Philosophy, the reading plan was backed and is now sponsored by the Philosophean Society, the honorary literary group of the men's colleges.

Seymour Katz of Newark, president of the society, said that his group was concerned with the way in which campus society is overspecialized. Even in the cafeteria, he commented, students tend to gather with those studying the same course. *Patterns of Culture*, he pointed out, "was chosen because, while basically a layman's introduction to cultural anthropology, it has implications which extend to all the social sciences and humanities. The essence of the book is its presentation of the new attitude toward, and the new method for, studying society and the individual." (Quoted entire from the New York *Times*, November 28, 1948)

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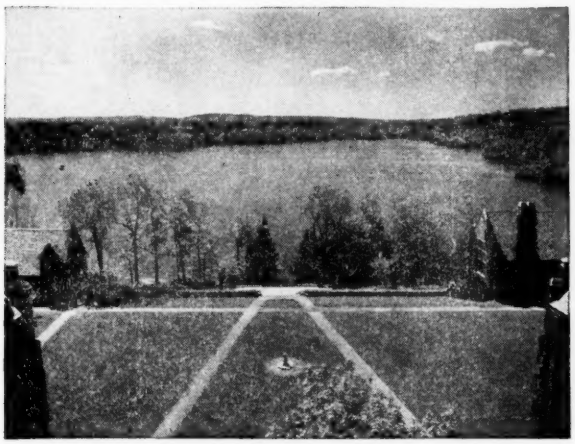
Statement of the ownership, management, and circulation required by the Act of Congress of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (39 U. S. C. 233) of MAIN CURRENTS IN MODERN THOUGHT published QUARTERLY at PORT CHESTER, NEW YORK for OCTOBER 1st, 1948. 1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher F. L. KUNZ, PORT CHESTER, NEW YORK. Editor F. L. KUNZ, PORT CHESTER, NEW YORK, Managing editor NONE. Business manager NONE. 2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as those of each individual member, must be given.) F. L. KUNZ, PORT CHESTER, NEW YORK. 3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are not any, so state.) NONE. 4. The two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. F. L. KUNZ, sworn to and subscribed before me this 30th day of September, 1948. HAROLD F. BEHRINGER, NOTARY PUBLIC IN THE STATE OF NEW YORK, APPOINTED FOR WESTCHESTER COUNTY, (My commission expires MARCH 30, 1950.)

1949 SUMMER WORKSHOP ON INTEGRATION
at Wellesley College, June 26-27-28-29-30



A view overlooking Lake Waban on the Wellesley College campus. On the right is shown a wing of Claflin Hall.

THE SECOND NATIONAL WORKSHOP ON INTEGRATION

The second national workshop of the FOUNDATION FOR INTEGRATED EDUCATION will be held in Claflin Hall on the campus of Wellesley College from June 26th to June 30th, 1949.

Leadership and program are being planned and will be announced in a later issue of MAIN CURRENTS.

The major topics have been tentatively established as follows:

MORNING PROGRAMS

Subjects: Problems in Content Inter-relationships:
- — The Role of Contemporary Concepts in the Unity of Knowledge
- — What are the techniques for the discovery and utilization of unifying concepts?
- — What evidences are there of unifying concepts?
- — How do problems in content inter-relationships affect inter-cultural and inter-ideological unity?

AFTERNOON PROGRAMS

Subjects: Operative Problems in Developing Integrated Education:
- — In research
- — In defining and clarifying objectives and values
- — In inter-college exchange of ideas and experience
- — In local and representative experimental programs
- — In teacher-training for integrated program

EVENING PROGRAMS

Subjects: Application of Principles of Integration in Modern World Society
- — In educational administration
- — In labor
- — In business and industry
- — In agriculture
- — In intergovernmental organization
- — In religion
- — In communication
- — In planning for an economy of abundance within freedom.

There is little doubt that this will be a meeting of exceptional importance. It will be concerned with the widest implications of integration in its bearing on the whole man. Eminent scholars, educators, professional and businessmen will be called upon to act as resource leaders.

The FOUNDATION will utilize the most modern and democratic methods of group participation that every subject considered may be discussed as fully as possible in the given time.

We urge that reservations be made at once, since attendance is to be limited to approximately one hundred persons. Inquiries should be made to

Mr. Gordon B. Halstead
Administrative Director

Foundation for Integrated Education
60 East 42nd Street
New York 17, New York

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